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PT7 cuts costs

FERRANTI Computer Systems

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Edwardes appeals for Mercury backing

EDWARDES . . . "Stop sitting on your hands."

SIR Michael Edwardes took a fighting stance this week in promising that Mercury would succeed in providing an alternative to British Telecom.

He told international telecommunications managers at their annual conference in Brighton that they had lived in a "stable" environment for too long. He called on them to "stop sitting on your hands in a wait-and-see attitude.

Leader Comment – page 19

Mercury needs your backing and fast."

Edwardes, who is chairman of Mercury Communications, promised that Mercury is here to stay. The alternative service, set up by BP, Cable and Wireless, and Barclays Merchant Bank, would not be deterred from its course by external pressure, he said.

Referring to action by BT unions to prevent interconnection of Mercury to BT networks, he said the events may give Mercury a "following wind. The dog barks but the caravan moves on."

Delegates to the Telecommunications Managers Association Conference received Edwardes' remarks enthusiastically. But there remains a strong reluctance by companies to take the risk of placing orders for Mercury services. The fear of local action by union members over servicing of equipment remains. As a result Mercury has been offering some "very good deals", as one delegate remarked, to get itself off the ground.

Edwardes told the delegates that "if you want a vigorous competitor to BT, your first priority is to order a two-megabit link from Mercury now". He said the controversy over interconnection versus privatisation had become confused in many people's minds. Interconnection was "no more than sense".

He added that it made sense for BT in terms of revenue, and was not a threat to jobs.

Mercury's own manpower would be "well into the thousands by the end of 1980".

Edwardes refuted claims that Mercury is opposing resale, although he looks to the government to maintain the basis on which shareholders have committed substantial sums to the enterprise. The standards and approval procedures for new equipment, he said, threatened to become "a serious bottleneck in the liberalisation process".

While pressing for the early passage of the Telecomms Bill, Edwardes called on the government to bring in a strong Office of Telecommunications (Oftel) quickly and before enactment of the Bill.

Thomson and CGE agree to share-out

by Jack Gee

FRANCE'S leading electronics and information technology groups Thomson-Brandt and Compagnie Générale d'Electricite, which between them employ 320,000 workers, are soon to submit to the government a rationalisation plan to share out their activities.

CGE, the only profit-making industrial group in the public sector, is likely to take over Thomson's production of telecommunications equipment, office automation, wires and cables.

Thomson, which was nationalised with CGE 18 months ago, is expected to concentrate on TV, video, household electronics, military equipment, and electronic and computer components.

CGE is simultaneously negotiating with Olivetti to obtain State owned glassmaker Saint Gobain's 45% stake in the Italian firm, with the aim of jointly developing an office automation industry which, with the exception of Olivetti's Logabax subsidiary, does not yet exist in France.

The agreement between Thomson and CGE is now in its final drafting stage before being submitted to the government for approval. Industry minister Laurent Fabius is understood to be in favour of a division of work by the two firms, to cut out wasteful development and marketing of similar equipment with State subsidies.

But Telecommunications Minister Louis Mexandeau opposes the concentration of manufacture of telephone switching exchanges in the sole hands of CGE, to limit the choice of French Telecom and foreign buyers to a single system.

President Mitterrand will be final arbiter. He is likely to be in favour of the share-out between Thomson and CGE, to save funds and rationalise the efforts.

CGE's managing director Georges Pebereau emerges victor of a struggle for power in French industry against Alain Gomez, the president of Thomson, who was appointed by Mitterrand last year. Pebereau is a CGE man; Gomez was an industrial adviser to Mitterrand before the presidency, and is a member of the Socialist Party.

Pebereau seems likely to extend his empire by obtaining a major stake in France's nuclear power station builder Framatome, whose majority shareholder, Creusot-Loire, is trying to raise cash for the government to cover its 600 million francs losses in the steel industry this year.

CGE already makes generators for the nuclear industry and by acquiring a stake in Framatome would make the reactor chambers.

Industrial observers say it is not yet clear what role in the rationalisation of France's high technology industries will be played by the leading French computer maker, and Matra, another electronics firm.

■ News Analysis – page 8

Stern calls for super effort in Europe

A MAJOR European effort to build a supercomputer was called for by Jacques Stern, chairman of Machines Bull, on the opening day of the ninth World Computer Congress in Paris this week.

Stern said the supercomputer was the driving force for all technological advance. What was needed, he said, was the political will to mobilise all Europe's forces to undertake a supercomputer project.

Europe already had the ability and the technology, he said. Europe would lose its autonomy if it lost control over data processing, Stern warned. And that, he said, would directly affect the fate of our children.

One European market, based on freely negotiated standards, is essential, Stern said. He pointed to the recent agreement by ICL, Siemens and Bull to form a joint research centre as an example of the way forward. "Our fate is intertwined," he commented.

Data processing as a tool of power was a common theme in the opening addresses at the conference. And revolution was one word used by all the speakers.

Pierre Mauroy, French prime minister, talked in the opening speech of a new and universal industrial revolution which he said must not make the ordinary worker suffer.

Mauroy's words were echoed by Amadou M'Bow, director general of Unesco, who said the computer revolution was an event which affected the whole planet. The computer should not, he said, be on the outskirts of industry and science – "individual conscience is needed to prevent the risk of the world being broken down into computerised and non-computerised societies".

MAUROY . . . Spoke of industrial revolution.

Bringing 1984 to mind, he spoke of the manipulation of minds, control of movement and threats to individuals' freedom as the dangers which must be avoided.

M'Bow announced at the congress a new Unesco initiative to be taken in co-operation with the Inter-governmental Bureau for Informatics for an international computer science programme to develop computer applications and co-operation among nations.

Stern also spoke of a revolution, saying the unprecedented effects on life could only be compared to those of the printing press.

He warned of new and deep imbalances if computer power was not made available to all. Computing, he said, was a great object of power – and Europe was lagging behind.

Stern warned that we may miss the revolution by concentrating on "marginal" things – for instance microcomputers. What was important, he said, was the digitalising of data for all operations – the whole flow of information within companies, from voice to text images and graphs. Central to that was the integration of telecommunications and data processing.

Raising further spectres, Stern said that in software, "we remain at the stage of pre-history," which threatened to paralyse and strangle data processing. Software techniques, he said, were developed when hardware was expensive, whereas the only rare and costly resource was man.

Survey reveals software surprise

by George Black

ALMOST half of the UK expenditure on external software and services is spent by end-user departments and companies without a computer of their own, and is not under the control of centralised data processing departments.

That is one of the surprising conclusions to be drawn from a major new *Computer Weekly* survey which is being undertaken by the International Data Corporation (IDC).

It is the first in a series of professional, market research-based surveys which will be published in the coming months (details on pages 18-19).

Control over expenditure on software products and services is passing away from the central data processing department – 44% is not under their control – partly because smaller firms do not have DP departments and others use bureaux; but it also is because of the growing strength of end-users, who are now going their own way.

The software revolution may be further off than some pundits have been arguing – hardware will still be more expensive up to the year 2000 – but software packages are already selling machines instead of vice versa.

The trend away from custom-written programs towards the packaged solution is so marked that, by 1990, 10 times as much will

■ Continued on back page

A major new planning conference for the information technology community will be held on February 7-8 next year. It will be the culmination of a professional market research effort by International Data Corp (IDC) and the National Computing Centre (NCC).

The conference, Plan IT 84, will be sponsored by *Computer Weekly* and NCC, in association with IDC. Full details on page 2.

STC makes 390 redundant

STANDARD Telephone & Cables is to make 390 redundant, just six months after promising its workforce jobs for the foreseeable future. And another 300 job losses were announced by GEC Telecommunications at its Coventry plant, where 550 jobs were lost last year. Both companies blame increased competition due to the government's liberalisation policy and technological changes. Some STC staff will be re-employed but no figure has been given.

A4 outlet

A JAPANESE-built A4-sized portable computer launched last month by US firm Tandy is to get a second outlet in the West, through Olivetti. The £500 machine, built by a purely manufacturing firm, Kyocera, is being launched by the Italian company as the M10, the bottom model in its M business microcomputer range.

New NEC chips

NEC HAS announced details of a new series of general purpose microprocessors at this week's IFIP conference in Paris. The V-60, with a 16-bit data bus, will have one Mips performance and the 32-bit V-70 will run at two Mips. Both have a four gigabyte virtual address space and are built in CMOS. The chips will be available by 1985.

IBM firsts

IBM HAS stepped outside the US to buy independent software for the first time. The company is to distribute Micro Focus' Personal Cobol, Compsoft's Delta database and Caxton's Cardbox and TKI in the UK under the same terms as its own software. It will also distribute US based Visicorp's packages throughout Europe.

Altergo is marching on

SHONE . . . "Sales and income have risen dramatically."

ALTERGO Products, the US outpost of the old Altergo empire, is going from strength to strength now that it is marching under the banner of Software Sciences.

Last April Software Sciences, a subsidiary of the Thorn-EMI electronics and entertainments conglomerate, acquired Altergo Products. This was part of the Altergo Software company, which crashed in April due to liquidity problems.

Software Sciences decided to beef up the Altergo Products set-up, and in July sent ex-Systime man David Packwood to the Boston office, to expand Altergo Products' US operations.

Software Sciences' chief Mike Shone said: "I am very pleased at the way things are going at Altergo. Sales and income have risen dramatically.

"Revenue for the June, July and August period of 1982 was $62,000. For the same period this year it is up to $500,000. We hope to reach at least $1.7 million this year, but it might well top $2 million."

Packwood's mission was to sell the old Altergo FQS (Friendly Query System), as well as to oversee a general expansion of Altergo Products' operations.

According to Shone he has done admirably: "FQS is selling very well. David and his team have sold packages to a whole string of US companies, including Chase Manhattan Bank, Florida Coast Bank, and the Prudential Assurance Company."

FQS enables IBM users to access, via CICS, live data held on DL/1 and IMS databases.

There are now 10 staff at Altergo Products' Boston office, and a new Chicago branch has just been opened six weeks ahead of schedule. This is headed by former Computer Science Corporation man John Churchman. Further offices will open shortly in New York and Dallas.

Apart from the income generated by the sales of FQS software, Altergo Products still enjoys revenues from licence fees on the Shadow system. This is an Altergo software package which complements the CICS system.

ICL extends its software partnership

by John Kavanagh

ICL has extended its partnership with software houses to firms handling its System 25 business minicomputer, and the Partnership scheme could open international markets to them.

Six UK software firms are in Brussels with ICL this week to hear more about the company's plans and to meet 18 European software houses.

The launch of Partnership 25 comes six months after ICL started wooing big software firms with Business 29, a similar scheme covering the ME29 and 2900 mainframes.

ICL and its Business 29 partners say it has been a success, with some firms finding new outlets in two or more countries through deals with local software houses. The scheme has also led to end user sales leads coming through ICL to the software firms.

"The ICL salesforce is starting to understand the Business 29 scheme and we're delighted with it now," said Steve Valdez, a director of Data Sciences International. "There was some fear at the start that ICL would use the scheme to learn our secrets but in fact they've been giving us theirs. Recently they told us all about the DM-1, which won't be launched until next autumn. That was an act of faith by ICL in the software houses."

Peter McGuffie, at McGuffie Brunton, one of the Partnership 25 firms, said he was "cautiously optimistic" about the impact of the scheme on his company.

"We're not in Europe now but this is a way to get in, through ICL or through an arrangement with a local company," he said. "There could also be reciprocal arrangements for us to sell other companies' products."

ICL partnership manager Norman Strangemore said there had been a heavy response from European companies to the new scheme.

He saw no conflict between ICL and its partners in the end user market. "We will have our own thrust into some areas, such as local government," he said. "But that leaves an awful lot of other specialist markets. Our salespeople have a guide to all the products available from different sources under the scheme and they introduce the software house to the user."

John Stanley, managing director of Business 29 firm Systemsolve, said membership of the scheme did not cut his independence.

"As a consultancy we offer the user the best kit to meet the need," he said. "If ICL invites us to meet a user and we are already bidding there with other equipment, we tell ICL. And if we examine the need and feel the ICL product is not appropriate, we again tell ICL. If we didn't, we'd be dead."

He added that dealing with third party companies had been a "culture shock" for ICL, but the scheme was going as well as could be expected and Systemsolve has been given good sales leads.

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BT shares will go on US market

by George Black and Nuala Moran

THE government will try to sell some of the shares in British Telecom on the US stock market after an unsuccessful attempt to interest the Japanese in the venture. It is worried that the floating of 51% of the organisation in autumn 1984 could prove too much for British investors to absorb.

Detailed plans for the disposal of the majority holding in BT are materialising just as its biggest union, the Post Office Engineering Union (POEU), has decided to pursue its campaign of action against privatisation.

Ministers are keen to make one offering for the 51% but that would mean it would have to raise around £4 billion at once, which could well prove a strain on the resources of UK investors.

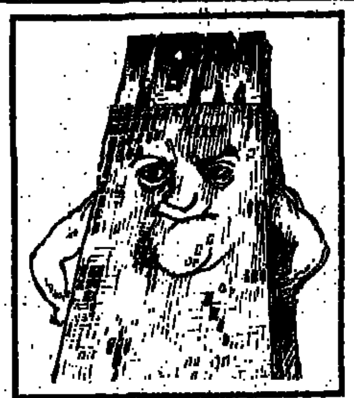
So it sent a Trade and Industry delegation to Tokyo in the summer to look at the chances of attracting cash from there. But the Japanese government, anxious to foster its own telecommunications industry, appeared unresponsive.

Now US business is being asked to help out instead, although taking less than 10% of BT. Whether it is likely to be any more enthusiastic than the Japanese is uncertain. But the arrangement is bound to further anger the unions, who will be quick to sound a patriotic note in the effort to keep BT in the public domain.

At a special conference at Wembley, POEU delegates voted by 80,824 to 48,713 for a "flexible package" of industrial action. It will be aimed against major financial and business institutions and "any other bodies seeking to make financial gain" from the sale.

The union is already taking selective action against BP, Cable and Wireless and Barclay's Bank, owners of the private telecommunications network Mercury. Some union members in London have been refusing to do installation and maintenance work on telephone and data transmission equipment for these firms since August 15.

Burden goes on takeover trail 6



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France appeals to EEC partners

by Jack Gee

THE French government is trying to enlist support from its Common Market partners in throwing up new barriers, ranging from tariffs to quotas and technical devices, to protect its limping electronics and computer industries against competition from the US and Japan.

André Chandernagor, the French Minister for European Affairs, submitted this project to his European colleagues at a ministerial meeting of the 10 nations in Brussels earlier this month.

Chandernagor said the Common Market countries must encourage mergers across national boundaries between their high technology industrial groups and throw open tenders for public sector contracts to their European neighbours.

The French proposals are designed to give a European guise to a specifically French problem. France's vaunted electronics plan, the Filiere Electronique, which was launched in 1982 with a five-year life span, now appears certain to fall far short of its key objectives. These include raising the country to the same rank as the Japanese and Americans in computers and electronics by the end of the decade.

In an effort to close its frontiers to Japanese videotape recorders France channelled all imports of these products through an understaffed Customs post at landlocked Poitiers from last autumn to this spring.

The French lifted this barrier after obtaining a promise from the Japanese to limit imports to Common Market countries.

But the French themselves got a dressing down from the European Community for introducing discriminatory trading curbs.

The six-month French embargo also strangled its own video recorder industry in its infancy. After failing to acquire a controlling stake in Grundig, hopes are now pinned on a recent agreement between state-owned Thomson Brandt and Japanese Victor. But the French consumer market for video recorders has shrunk almost out of existence during the shutdown on imports.

While state-controlled Bull, France's biggest computer maker depends heavily on Honeywell for mainframes which are imported from the US or built under licence, IBM France gets much less than the fair share of orders due to a firm which makes a profit and provides jobs for over 22,000.

The French microcomputer industry is virtually non-existent. The biggest manufacturer, Goupil, is dependent on government orders mainly for schools. It will sell at best only 10,000 of the 35,000 desk-top machines bought in France this year.

It seems unlikely that France's neighbours will be able, even if they wish, to help it make up the technical lag.

■ Leader Comment – page 15

BURTON . . . "This combination has not been offered before."

Case makes a Beeline for electronic mail

by Donald Kennett

DATA communications specialist Case has taken £1 million worth of orders for its Beeline electronic mail exchange before unveiling it to the public. And the Watford-based company expects to sell at least 40 systems next year, at prices between £30,000 and £350,000.

Managing director Peter Burton said: "Beeline is a combination of a very sophisticated messaging system with a data switch and with protocol conversion. The particular combination has not been offered before.

"We expect the product to last well into the 1990s and we will have a team developing it further for the whole of that time."

Chairman Duncan Fitzwilliams said the system was "undoubtedly the company's most significant product announcement since the DCX data concentrating exchange in 1979. That was a world beater and we are confident that will also prove true of today's product."

The product uses up to eight Motorola 68000-based processors with 256 Kbytes of RAM each, up to 16 Mbytes of shared RAM and up to 300 Mbytes of Winchester disc capacity.

According to Burton, the processors are rather more powerful than a Digital Equipment VAX 750.

"The message processing function only occupies one of the eight processors and a second processor controls communication between the system's two high-speed buses. That leaves six for special applications or for increasing throughput or for adding future Case-supplied features."

The software available for the system includes a long list of options developed for the Case MSX message switch that was launched in 1976 and now, according to Burton, has more installations in the UK than all its competitors together.

But unlike the MSX, which must have subsets of the options specially configured for each customer, Beeline can have them all on the system at once.

It is designed to accept input from most types of terminal or computer available and to connect them to the outside world via virtually every type of local or wide-area network or medium, including teletex, telex, private and public packet networks and the telephone network.

US retail chain comes to the U

by Caroline Burgess

COMPUSHACK, microcomputer retail ch expand into Europe wit of franchisees, and the fi in the UK. Since its in April, it has establishe outlets.

Rival US chain Comp opening stores at the ra

The move coincides launch of two IBM co microcomputers by its company, Tava. The selling rights of both CompuShack.

The master franchise secured by 21-year-o Markham, managing its own British syste Paperlogic.

Markham's dealings started when he visited bid to sell his own accou ware package.

He sold the exclusiv buting rights for the U Tava, then returned t for the launch of Cogn April. It was during th he negotiated the agree the master franchisor for CompuShack in and Europe.

The agreement w signed this month, bu the franchise plans wit nounced until the new harn claims that alread interest has been sho the UK and from the Europe.

The two microco launched by Tava, a pers desk-top personal comp simultaneously announ US. The portable weigh 320K slim-line disc dri memory and detachable

It will run CP/M 86 a Concurrent CP/M 86 is available soon. The p £2,199 with an increm £200 when Concurrent is introduced.

The desk-top version system which will ru software and is similar t PC. But it will retail at machines will not be re about two months.

MARKHAM . . . Mos sor.

IBM adds 30% power to 4300s

by Keith Holder

IBM has plugged the gap in its medium systems mainframe range and effectively announced its future strategy for migration with two new 4300 processors. These provide better price-performance, a 30% increase in computing power, and are backed up by a new direct access storage module and "jargonless" software for commercial users.

The latter includes two forms of jargonless software for businessmen who do not have time to train for conventional languages.

The 4361 and 4381 processors, according to IBM, provide a major upgrade path for existing 4321 and 4331 operators.

George Goodwin, of the UK IBM User Group, commented: "Anything that gives the user better price-performance is good news to me. They genuinely are an improvement over the older 41 range and, to use an Americanism, give you more bangs per buck."

But while IBM users may rejoice over this long-awaited announcement, plug-compatible manufacturers are already looking at their next moves.

Nick Hollis, of BASF, said: "On the face of it, it looks as though IBM has tidied up the 4331 and 4341 range, making it more logical, less confusing.

"It is not a very radical announcement, though it has cleared the air. It is difficult for us to work in a marketplace where people are uncertain of what IBM will do."

Chris Hall, director of medium systems marketing for National Advanced System, was not impressed. "It's exactly the strategy for IBM to pressure DOS users to move to MVS through VM. The only surprise about these systems is that IBM is still using TTL and has not used these machines to testbed ECL logic."

The 4361 group offers optional two 12-megabytes of storage with a maximum of six channels, one of which can be used as a byte multiplexer. Prices range from £105,000 for a two-megabyte model four to £201,000 for a six-megabyte model five.

The 4381 model, groups one and two, has storage options of four, eight and 16 megabytes with six standard and six optional channels. Prices range from £232,000 to £395,000.

On the software side, enhancements for VM/SP (virtual machine/system product) and its high performance version are offered for engineers and scientists, while businessmen who cannot afford the time to train in conventional languages are catered for by Intellect and Frango, which in "plain English" are designed for interrogation and graphics.

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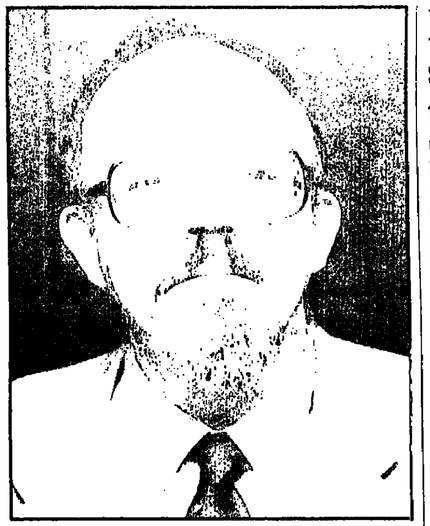

GOODWIN . . . "More bangs per buck."

Lisa price slashed to £6,500

by George Black

APPLE has slashed the price of its talked-about, user-friendly micro Lisa from £7,950 to £6,500. A cut was widely predicted from the day of its unveiling, but not expected so soon. UK marketing director Keith Hall said his hand had been forced by the US company which had sold 6,000 in three months.

Lisa went on sale in this country six weeks ago and has so far sold nearly 200. Hall said it had always been the strategy to lower the price of Lisa before mid-1984 when other models based on the Motorola 68000 chip would be launched.

"It happened earlier than I might have chosen as we have only just come on to the market here," admitted Hall.

The US company has already unbundled the software from the hardware, but Apple UK is postponing a move to copy this plan. Some 15 third-party program developers are working on Lisa applications. When they are ready will be the time for unbundling here, said Hall.

Computer Weekly/NCC/IDC joint venture

Conference will help plan the IT processing

A MAJOR planning conference for the information technology community is being launched in February, 1984. Sponsored by *Computer Weekly* and the National Computing Centre, in association with International Data Corp, the conference will be based on a major body of research.

Called PLAN IT 84, the conference will be a valuable tool for information systems and services managers and general management who have a specific remit for computer services.

In contrast to many other conferences, PLAN IT 84 will be based on a specific and tailored body of research.

The conference aims to provide an independent, research-based guide on the short-term planning implications of existing trends in information technology, and its effect on the information systems professional.

David Fairbairn, chairman of NCC, said the conference would be of value to any company of such magnitude that it needed to plan its computer processing, and had an established data processing installation.

In the normal planning process, information is being picked up from multiple sources. PLAN IT 84 will package a heavy research base, with recommendations for users, in one two-day conference.

The information centre in companies is undergoing dramatic change. So much is happening with technology that many companies have not properly set a policy to do their planning. The conference will present information in such a way that users can go away and implement the ideas.

It will be held February 7 at The Royal Lancaster Hotel in London.

Full details available from NCC Seminars, Oxford Road, Manchester M17BD. Tel. 061-228-6383.

IBM goes back to basics

by John Kavanagh

IBM has produced a 512K-memory chip – by going back to basics. The industry leader has used plate pushing, a technique normally used only in very simple circuits.

The dynamic random access memory was unveiled last week. It is still in the experimental stage and there are no plans yet to build it into existing products.

Plate pushing involves sending an additional electrical charge across a chip. This improves reliability because the data signal is stronger. At the same time IBM says more storage cells can be packed on the chip. The "unique" architecture demands less support circuitry and thus fewer electrical paths between that circuitry and the storage cells.

IBM says the result is that 64% of the chip is available for data storage. It says this is one-third more than on other chips.

The experimental devices are three-eighths of an inch square – about three times bigger than 64K memories.

Retrieval time is 120 nanoseconds, although in some applications that can be halved. Data can be accessed one bit, two bits or four bits at a time.

Using bigger electrical charges implies more heat. But IBM said: "The experimental project was aimed at examining the use of plate pushing. We have not yet explored all aspects of the chip design. But early results show no increase in heat."

BT may replace PSS with new equipment

by Donald Kennett

BRITISH TELECOM could scrap its UK-supplied Packet Switch Stream public data network after only 2½ years in service and replace it with new equipment.

Bids are know being evaluated from a dozen companies including the current supplier Plessey in the UK, Tymnet of the US, Northern Telecom of Canada and SESA of France. Other potential suppliers include AT&T, Nippon Electric, Amdahl Communications Systems, Tandem Computers, Standard Telephones & Cables, GEC and IBM.

If the job goes to a company other than the present supplier, it is likely to mean a full replacement. A BT spokesman said: "I don't see that an alternative technology can be compatible with what is already in use. It's a question of a second generation network with a much greater capacity and capable of supporting additional value-added services."

Meanwhile, BT will continue to install network switches supplied by Plessey under licence from GTE Telenet in the US. By the end of the year the network will have grown by 50% from its current 18 switches to 27.

The bidders are assuming that Telecom has gone out to tender because the current equipment will not meet future standards. But Telenet European marketing director Harry Welch said BT had had no problems with the equipment itself.

He said: "BT had complaints from its users about its ability to supply service. It was not placing sufficient orders for equipment because the growth was much greater than it anticipated."

The BT spokesman said: "What we have at the moment is our first generation system. We have learned that demand for packet switching is high and the forecast is that it will continue to be high. We need to increase the capacity of the network – in other words what we need is a big switch. What we have now is a small switch."

If Plessey can convince BT of its system's potential, it presumably enjoys price and other advantages from having a lot of equipment already installed.

Telenet's Welch said: "The physical size of the switch doesn't make any difference. The equipment we offer is modular – it can expand by interlinking more units, so it has almost unlimited flexibility in meeting growth."

The BT spokesman said that PSS had been doubling in size every year. This growth rate could not have been predicted, since only one commercial user had shown any interest in the service's experimental forerunner KPSS.

Atlantic goes for full listing – and £10m

by John Kavanagh

ATLANTIC Computers is going to the Stock Exchange this month to raise £10 million to back its growth from a leasing company into a systems supplier and product distributor. The company is going for a full listing with 25% of its shares.

This shift in emphasis, plus a move into the property market, follows a doubling of Atlantic's turnover to £32 million last year, while profit went from £995,000 to £2.6 million. The new money will be used to buy product distributors or take on exclusive rights to sell products from other firms.

"We have over 200 installations in the UK and 50 abroad and we should be marketing more products to them," said founder and chairman John Foulston.

"We already have an insurance brokerage and the Failsafe back-up centre, which we run with BL Systems, plus modems, cables and so on. We buy these products on an OEM basis from manufacturers," he added.

"But there are other areas where we could have products, especially in telecommunications, where there's tremendous growth. These could include front-end processors or complete systems."

FOULSTON . . . "Over 200 installations in UK and 50 abroad."

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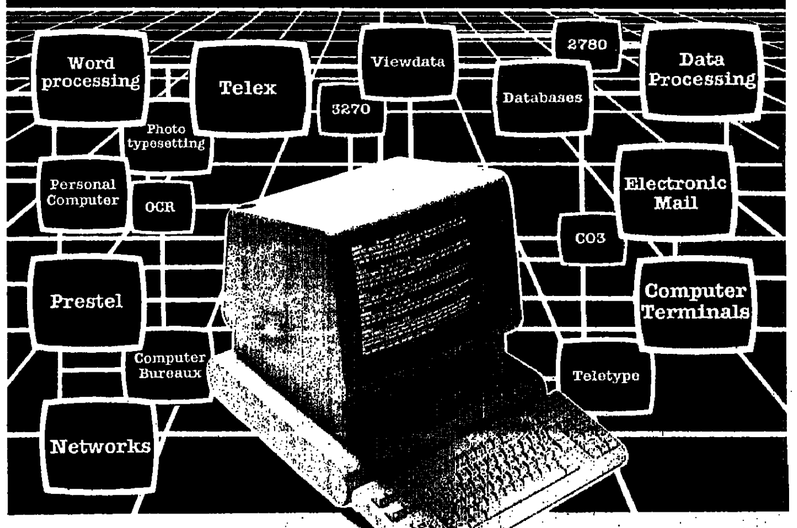

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Bull reduces its deficit by half

by Jack Gee

BULL, France's state controlled computer manufacturer, expects to halve its 1982 losses of 1.3 billion francs (£105 million) this year following an encouraging performance for the first semester, chairman Jacques Stern said.

Stern reported that Bull, formerly called Cii-Honeywell Bull has increased turnover by 28% compared with the first half of last year, deliveries by 30% and exports by 19%.

However, he warned: "The hardest part of the road is still ahead of us. But these results give us full confidence in our ability to get through the Alps ahead of us."

A major unsolved problem is the ability and willingness of the state, which holds 80% of Bull's equity (the remaining 20% remains with Minneapolis-based Honeywell) to pour more cash into the firm. In 1982 the French taxpayer contributed 1.5 billion francs (£120 million), barely enough to pay Bull's debt charges, and leaving little over for investment.

Although Bull aims at earning 50% of its turnover from office automation systems in 1986, the closing year of France's ambitious five year Electronics Plan, Stern has made no disclosures about how the firm will achieve this.

Within a few days Bull will surrender its 24% stake in Olivetti. In all, the French government holds through Bull and glassmaker Saint Gobain 33% of the Italian company's equity.

State-owned Compagnie Generale d'Electricite's subsidiary Cii-Alcatel is negotiating with Olivetti to consolidate the bulk of the French holding.

But Olivetti's chief executive, Carlo de Benedetti, is keen to sell two-thirds of the French stake to AT&T.

This would leave Cii-Alcatel with only 10% of Olivetti and a minor role in a venture to which French Industry and Technology Minister Laurent Fabius attaches great importance, to develop and market a Franco-Italian electronic typewriter.

Bull is keeping a close eye on the progress of negotiations between Olivetti, CGE and AT&T because its own future in office automation will depend on their outcome.

The acquisition last year by Bull of CGE's office systems subsidiary Transac is a key element in the state computer maker's ambitions to capture a big slice of the office automation market and restore itself to financial health.

Stern said: "We do not want to leave Bull in a permanent state of dependence on the French taxpayer. We want to bring the firm back to robust and normal management."

BENEDETTI . . . Keen to sell.

Peachtree buys a branch

by George Black

PEACHTREE, the micro software subsidiary of the US giant MSA, is moving into the educational market with the acquisition last week of Edu-Ware Services of California.

Peachtree bought Edu-Ware through MSA for a mixture of stock and cash worth $1.5 million, plus some payments expected from future profits.

Last year Peachtree bought a British software house called CSA Microsystems. It is only just over two years since Peachtree itself was lifted from obscurity when MSA took it over for a stock and cash mixture of around $5.5 million.

Its turnover, then about $2.3 million a year, has since rocketed to $9 million. And meanwhile its hungry parent MSA has gone on swallowing small but promising applications outfits.

Edu-Ware was set up in 1979 by Sherwin Steffin and Steven Pederson. Last fiscal year it netted $1.6 million from products in both schools and games fields, running on well-known micros such as the Apple, Atari and IBM-PC.

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New developments to prevent computer crime

Societies plan to share

by Donald Kennett

BRITAIN'S building societies have worked out how to have a shared network of automated teller machines (ATMs – cash dispensers and transaction terminals) by the end of next year.

The Council of the Building Societies Association (BSA) last week accepted in principle a report from its ATM subcommittee on how the job should be done. BSA business and technical planner Brian Townsley said that a company was to be set up to own and run a switching centre through which the ATMs and computer centres belonging to member societies would be linked to each other.

Some societies – including the Halifax, Leicester, Peterborough and Cambridge – are planning to have their own networks operational before the end of this year and by the time the switching centre is operational there should be at least 250 ATMs ready to be linked through it to building society computer centres.

The new company, which has yet to have its name accepted by Companies House, will have its first board meeting next Wednesday, when it will decide on how to charge the societies for its services and whether to adopt the detail of the recommendations in the report.

The report was prepared by a working group of the BSA council and a team of consultants from CAP, who started their study in March.

Four US suppliers – Electronic Data Systems, Applied Communications, Anacomp and ADP – were invited in June to tender systems for the switching centre.

The new company is expected to pick EDS, one of the world's largest computer services companies whose strong point is that it will install systems and be responsible for facilities management on a fixed price contract for a period of several years.

EDS would base the system on the Base24 software, recently chosen by the Trustee Savings Bank for its ATM network, which is supplied by Applied Communications and runs on Tandem computers.

An important factor in selecting the system was to preserve the greatest possible choice of ATM supplier for the building societies subscribing to the network. Applied Communication claims that its software supports all ATMs on the market, as well as home computers and videotex terminals.

Surgery plan isn't working, says fellow

by Caroline Burgess

THE government scheme to introduce microcomputers into doctors' surgeries is not working, according to Dr Norman Stoddart, ICI Computer Fellow to the Royal College of General Practitioners.

Stoddart claims the joint Department of Trade and Industry and Department of Health and Social Security scheme is being "hushed-up" by the DHSS and he can get very little information about it. Less than half of the half-price microcomputers on offer have been installed, said Stoddart.

The choice of computers was limited to two British makes. According to Stoddart, that meant that although they were half-price they cost as much as other models on the market. It also limited the choice of software to two packages.

STODDART . . . Wants more research.

He also foresaw another problem that at the end of the scheme, due to run for three years, the doctors would have to meet the cost of maintaining and updating the machines themselves.

But a spokesman for the DHSS said that the scheme was running well and that over 100 microcomputers had been installed. "It is too early to expect any feedback from the scheme." The DHSS aims to have all the microcomputers installed by early 1984.

The DHSS chose a number of GPs to receive the microcomputers.

Stoddart says there is no co-ordination for the long term for the introduction of computer technology. He wants "more research from academics, more money from the government and everyone to get together".

SALES BRI

£2m system for drug telesales

ICL has won a £2 millio from the big UK drug dis Vestric to replace its control system. An ICL 2966 mainframe will replace ICL 2960 computers so that can be directed to any of houses.

The system supports 300 ICL terminals in Vestric bra used to run a telesales servi there are 2,000 micro-based nals at the end of the line in ists and hospitals linked the Vestric branches to its ter centre in Liverpool.

More for Nixdo

NIXDORF, West Germ second biggest compute has increased its hold on t tish Housing Association Kirk Care Housing Asso which provides shelter for people, has become the tish Housing Association Nixdorf computer by ord 8870 Model 35 for financ administration work.

First for Prime

PRIME has taken its fi order for the new top ra supermini from ICL's Eng Department. The machine place one of four existing 750s for computer-aided des

Arcad chosen

ANOTHER firm of consu gineers has moved into graphics with an Arcad tion from Applied Rese Cambridge. Bingham Bl Partners has ordered the drafting system GDS 3.3 Arcad stations to help design buildings.

Unix at No. 10

UNIX software house Software has added to its worldwide government for its XED word processi age, an order from the Cent tistical Office of the Office.

DoTI aids robo

BRITISH Olivetti will install a computer-con manufacturing system for Fluid Power of Glenrothe million contract. The pr supported by a Departm Trade and Industry grant the Flexible Management S

Ministry buys

COMPUTER Technology the Ministry of Agriculture, ries and Food a 300 Mbyt drive, plus an intelligent tion and seven VDUs to CTL 8086 system.

PO timeshares

THE Post Office is to buy timesharing computer, 4341, in a deal struck with Computer Services (PCL Post Office has until outside bureau services.

Air seats by mini

AIRLINE charter oper Owners Abroad has opted £600,000 reservations and counting system based on Elmer's 32-bit minis to cope fast growing seat reservation

Telex that doubles as a micro

by John Kavanagh

UK COMMUNICATIONS giant Cable and Wireless has moved into the microcomputer market in an upside-down way: while other firms offer a telex interface option on their microcomputers the company's Cable and Wireless UK Services subsidiary has launched a telex message switching system which can double as a microcomputer.

The new MX110 handles standard message switching facilities such as editing and automatic dialling into the telex network – but it also runs the Digital Research CP/M operating system. This means firms buying the telex switch also have access to the 4,000 packages available under CP/M. The MX110 is based on a Computer Automation minicomputer.

"It's a switch first but it can also run stock control, payroll and so on," said product specialist Tom Buckley. "It will be interesting for smaller companies thinking of installing one or two micros or a small business mini."

Prices start at £6,760 for a system with four ports and a one-megabyte floppy disc.

Euro head urges users to agitate for standards

USER groups should use their muscle in bringing about a breakthrough in telecommunications standards.

Leon Smulian, head of the telecommunications section at the European Communities directorate general of internal affairs and industry, said last week that a homogenous continental scale market is essential if the Community is to compete worldwide.

Essential to that is a new telematics infrastructure, with a high common implementation of standards.

Smulian, who was speaking to delegates at the annual Telecommunications Managers Association conference in Brighton, said that liberalisation of telecommunications would not itself automatically relieve users from the infliction of proprietary standards that trap them into proprietary systems.

European Community governments, he said, must agree to exchange a national approach for a common approach. Such an approach has been adopted by the European Commission, but unanimous agreement has yet to be reached in the Council of Ministers.

His views were echoed by at least one manufacturer.

Graham Burke, director and general manager of Plessey Communications Systems, said that short-term competition on the part of manufacturers must be subordinate to the long-term good.

Otherwise the freedom to compete that comes about with liberalisation could move into anarchy, with claim and counter claim by manufacturers as to who is really meeting international standards.

Burke said standards present an urgent marketing problem for computer companies, which must accept that some part of their computer systems could be replaced with parts from other manufacturers.

Burke seconded Smulian in calling for users groups to take a leading voice. They are not doing enough, he said, to ensure a co-ordinated voice from all of Europe towards standards.

BURKE . . . "Short-term should be subordinate to long-term good."

Lack of buildings hits technology

by John Kavanagh

THE UK high technology industry is being hit badly by a lack of suitable premises. And outdated laws and attitudes to commercial and industrial property is setting back the UK's chances of attracting overseas technology firms.

These are the conclusions of a survey by chartered surveyors Herring Son and Daw, which calls for urgent action to improve the supply of suitable property.

The survey is a follow-up to a study done last year with *Computer Weekly*. Both surveys point to a lack of understanding of technology companies' needs by property investors and government.

One concession has been won since the first study. The cost of industrial premises is tax deductible as long as the office content is not above a certain percentage. The 1983 Finance Act has raised that percentage from 10 to 25%.

But if the office content exceeds 25% the entire tax concession is lost. And the survey found that 70% of companies needed more than 25% of the space as offices, typically because they are heavily into software as well as manufacture.

One microcomputer manufacturer said over 80% of its staff worked in office-like areas, even though they were production people.

Town planning rules cannot keep pace with the industry. The survey report says: "The electronics industry is often uncertain from one day to the next what is the major use of premises, because the definition of use is so fine and changes so fast. A new category of mixed use is needed – and the sooner the better."

Property developers apparently think of a high technology property as a warehouse with a garish stripe on the roller shutter door and a few brightly coloured panels. Little attention is paid to the need for top-quality environment.

Comserv boss leaves

by George Black

MINNEAPOLIS manufacturing system specialist Comserv has lost its boss, only four months after he took up the job.

Ted Priem, who became president at a shareholders' meeting in May, has quit because of "certain policy differences" with the rest of the management. His departure has forced Richard Daly, who stepped down as president to make way for Priem, to resume his post at the top.

The news reflects the difficulties that software firms serving manufacturing industry have been experiencing during the continuing recession – particularly with increased competition in the field.

Comserv's growth remained impressive up to the end of last year with revenue of $25 million and profit of $2.5 million, but 1983 has seen trouble piling up. Cashflow problems have arisen and doubts have been voiced whether the firm will make a profit at all this year.

Added to this gloom has been the arrival of MSA, the world's biggest software company, in the marketplace with a suite of production programs that belonged to Xerox's Arista subsidiary. MSA took over Arista last year and has repackaged the code to interface with its own financial systems.

PRIEM . . . Differences.

MSA itself has been finding the manufacturing world hard to penetrate but it has a much wider and more thriving customer base in the accounting world.

Comserv knows that it needs to offer a wider range of services if it is to survive in the race with MSA. For that reason it is in negotiations which could lead to it offering McCormack and Dodge's financial programs alongside its own manufacturing system, AMAPS.

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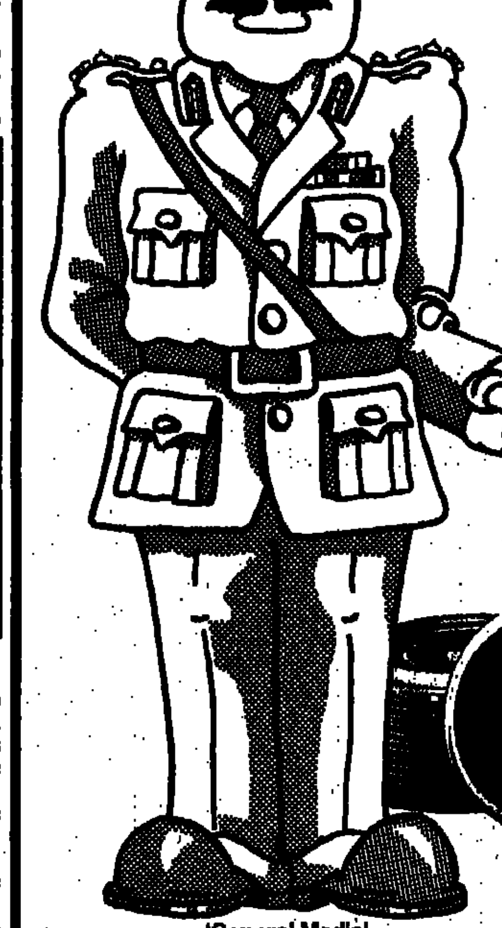

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Acorn faces education challenge from Norway

by Philip Hunter

NORWAY'S first maker of personal computers is set to challenge the Acorn on its home ground with a machine aimed at the education and schools market.

Kontiki-Data of Oslo is now looking for a UK distributor or software house to import its machine and later go into volume production in the UK if sales take off.

The computer was designed in spring 1983 with a view to being adopted as the Norwegian broadcasting machine as the Acorn was in the UK.

Like the Acorn, the machine runs BBC Basic, but managing director Lars Krohn says that he has taken advantage of his company's late start to improve on the Acorn and other established makes.

The most striking improvement, Krohn thinks likely to clinch the broadcasting contract this autumn, is the unique ability to synchronise computer output with the television pictures.

It also offers the ability to read floppy disc drives written for other computers such as the Apple. Another advantage is an upgraded version of the CP/M operating system called KP/M.

The machine sells for about £900 in Norway including 64K memory and a diskette station, making it about £300 cheaper there than the equivalent Acorn version. But Krohn admits that the price would have to come down for the competitive UK market with bigger volume production.

Takeover buff rakes in the cash

by Philip Hunter

A STRING of big orders has given the London-based small systems house Optim MCS cash for more takeovers. Early this year it bought out the European arm of a US mini maker, and also picked up a small part left from the collapse of the Altergo software empire.

Managing director Mike Burden says that he will soon complete the takeover of a Home Counties software house, with another bigger buy coming soon after. And next year Optim will be seeking a quotation on the Unlisted Securities Market to raise cash for continued expansion.

The company last week announced its biggest order yet, worth £2 million for minis and micros from the big UK furniture buyer Floreat.

Optim was born last year from the US Monotype Corporation following a buy out of subsidiary Monotype Communications spearheaded by Burden. The company inherited its first product from Monotype, a standalone multitasking micro called the Ace.

Optim quickly brought a minicomputer into its product range by taking over the European end of MCS Minicomputer Systems early this year. The next move was to pick up some of the Altergo bits.

Both the Ace micro and the mini called Micos are still made in the US. A logical takeover would be of a company with a UK factory to build the machines and finish the job of severing the remaining US ties.

The Floreat order involves supply of both the Micos mini, which costs about £40,000, and the Ace micro, which sells for around £10,000. The order is likely to be later extended by up to another £1 million as Floreat extends its existing total of 137 retail companies to over 200 next year.

BURDEN . . . Plans more takeovers and aims for USM.

Tatung to make micros

TATUNG (UK), which two years ago took over television production from Decca, is now producing monitors and terminals for computer use, and also plans to enter the microcomputer market early next year.

VDUs, printers, disc drives, a business computer and a home computer are the products planned for the future. The disc drives will use standard 5¼in diskettes and be compatible with the Apple 2. A dot matrix printer capable of italics and graphics should be available by the end of the year.

The planned business microcomputer will be based on a Z80A processor.

DEC takes to Ayr in expansion bid

by Caroline Burgess

DIGITAL Equipment is to make its personal computers in Ayr, Scotland in its bid to expand into the European market. The transfer of production to Europe started last year with changes at its West German factory.

At present the Ayr plant only carries out final assembly and testing of minicomputers. In a gradual phase-over programme it will start by manufacturing circuit boards and progress to entire central processing units.

The Ayr factory was opened in 1976 and expanded in 1979. It now employs 570 workers and has over 370,000 square feet of manufacturing space.

The changes are not expected to lead to any new jobs.

According to Darryl Barbe, Digital's UK managing director, the changes will involve the retraining of many of the staff. It is expected to take between 12 and 18 months to complete the phase-over programme.

The choice of the Scottish plant was based on the previous success of the plant and encouragement from the Scottish Development Agency and the Scottish Economic Planning Department.

The west coast of Scotland also offers good communication links, including two international airports.

Ayr's present work will be transfered to Digital's Galway plant. This move has been encouraged by the Industrial Development Authority of Ireland.

The Galway plant has been manufacturing minicomputers since its opening nearly 12 years ago.

Both IBM and NCR have chosen Scotland for the manufacture of their personal computers for the European market. ACT recently announced production of the Apricot at Glenrothes, thus becoming the first English-based company to move into Scotland

In October last year Wang announced plans for a main manufacturing site at the University of Stirling.

Micro firm makes record ga[...]

MICRO Business System[...] made record profits of [...] the half-year up to the end [...] chairman Clive Rich[...] nounced this week. Tu[...] the period was up to [...] more than the firm['s] [...] the whole of last year.

The group's activi[ties] [...] sales and rentals of small [...] and terminals, software [...] support engineering and [...] The Altos personal [...] operation has been put [...] and the new division for [...] sonal computers is repo[rted] [...] prospering. The board [...] mending a staff sha[re] [...] scheme.

Thumping lo[ss]

MATTEL of California, [...] by the slump in video [...] home computers, posted [...] ing $156 million loss for [...] quarter, closing on July [...] same period last year [...] $17 million. Sales [...] nearly a third on 1982 [...] lion. It expects a sub[...] over the whole year [...] January.

Healthy grow[th]

EPS CONSULTANTS, [...] don software house best [...] the financial modelling [...] FCS-EPS, showed a [...] growth in its first quar[ter] [...] £1.2 million. This was [...] by joint managing dir[ector] [...] Power to the micro ver[sion] [...] FCS-EPS, called Micro-FCS [...] a new module, FCS-Multi [...]

HP bid

US MINI manufacturer [...] Packard (HP) is buying [...] its Japanese affiliate Y[...] Hewlett-Packard for $[...] YHP, employing 2,000 [...] sales of $250 million, [...] joint venture between HP [...] Yokogawa-Hokushin of To[kyo] [...] wants to up its stake from [...] 75%.

Hat-trick of los[ses]

THE diverse Computer [...] tion group, of Boulder, Co[lorado] [...] lost $74,000 on turnover [...] million in the year up to [...] June. The firm blamed [...] revenues but plans to recruit [...] salesmen to put things right [...] is the third year running [...] Automation has shown a lo[ss] [...]

Nixdorf does w[ell]

WEST Germany's top [...] maker Nixdorf did well [...] ing systems and electronic [...] gisters to increase its [...] fifth in the first seven [...] the year. Small to med[ium] [...] ness systems were also [...] helping to expand the [...] 400.

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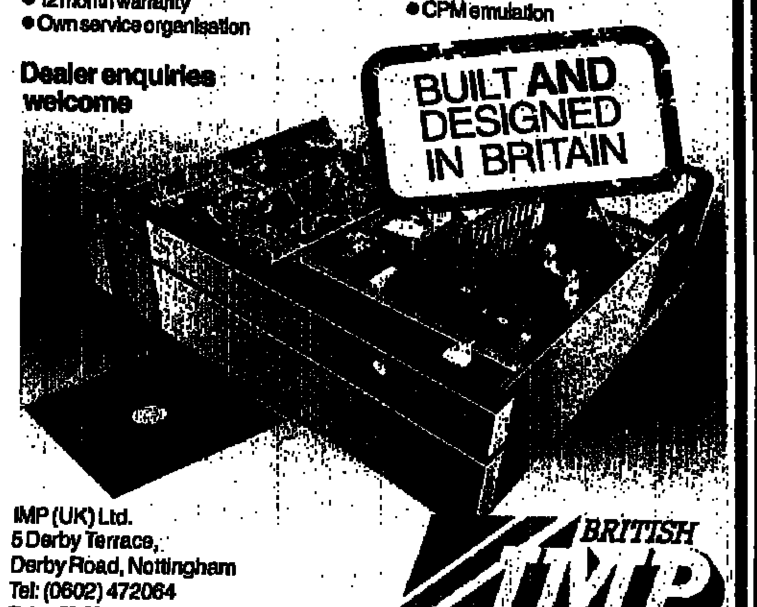

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Make your Rita choice

NOMINATIONS now are being accepted for two major awards for the UK computer industry. Awards for "Systems Innovation of the Year", to be sponsored jointly by the National Computing Centre and *Computer Weekly*, and "Newcomer of the Year", sponsored independently by *Computer Weekly*, will be given under the Recognition of Information Technology Achievement scheme (Rita).

The ground rules for nominations are simple. Select your choice for "Newcomer of the Year", or "Systems Innovation of the Year", or both, and complete the form below. A separate entry should be made for nominations in each category.

The award to "Newcomer of the Year" will go to that start-up computer company which the judges think best exemplifies how the UK can remain a force in information technology markets.

The company will have been in business less than two years as of the time of close of nominations on September 30, 1983.

The company must be of UK origin, and should be involved in the provision of hardware, software, or services to the information technology market.

"Systems Innovation of the Year" will be awarded to that complete system, component, peripheral or part of a system which is judged to be the most outstanding example of achievement in the field of information technology in the UK during 1983.

The equipment or systems must be available in the UK during 1983, and the innovative element in the system must be wholly or predominantly of UK origin. Software alone and word processing or office systems are precluded as these are covered by other Rita awards.

Companies or individuals cannot nominate themselves. Members of the staffs of *Computer Weekly*, the National Computing Centre, and Clapp & Poliak may not enter.

In each award category, a case of wine will be awarded to the person who first nominates the ultimate winner.

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Return this form, to arrive by first post September 30, 1983, to: Linda Allen (Rita Awards), Computer Weekly, Room L218, Quadrant House, The Quadrant, Sutton, Surrey, SM2 5AS.

I wish to make a nomination for the Newcomer of the Year/Systems Innovation of the Year award. *(Please delete where appropriate. If you wish to nominate in both categories, please photocopy this form.)*

My name ______________________ Job title ______________________

Company ______________________

Company Address ______________________

______________________ Telephone ______________________

My nomination is (Newcomer or System): ______________________

Company Address (full postal address if possible) ______________________

I attach a short statement explaining why my nomination should win.

Signed ______________________ Date ______________________

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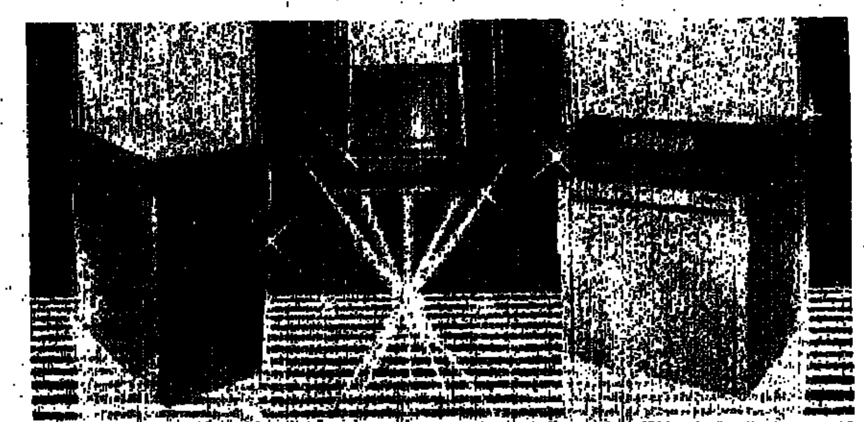

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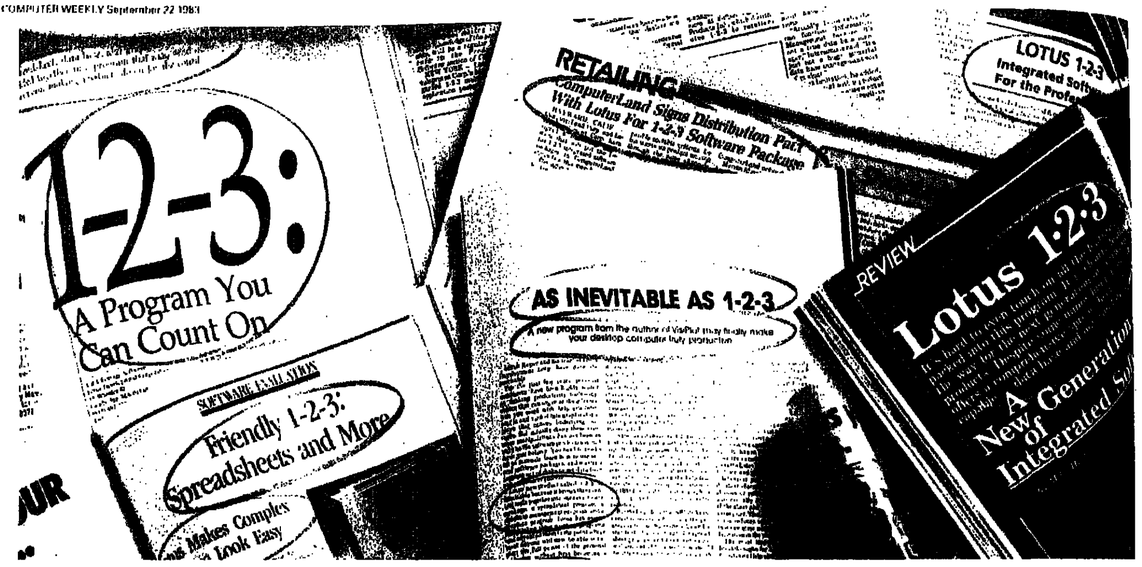

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MICRO NEWS

US stars face money trouble

FINANCIAL troubles dog US microcomputer industry stars. Osborne's slide towards bankruptcy overshadows others' problems, but the outlook is glum at the business end of the market as well.

IBM continues to increase Personal Computer shipments hand over fist while rumours of the impending arrival of its Peanut machine continually cause flutters of alarm for rivals at the lower end of the price scale.

And it is IBM's domination of the small business micro market – and almost of the grey area between home and business before its product is launched – that lies behind the trouble.

Victor Technologies, for example, the company that builds and sells Chuck Peddle's Victor/Sirius 16-bit, has run up against IBM. Victor reported heavy losses last quarter – over $11 million – and has been forced to lay off staff.

Last week it dropped another batch of people, bringing the total redundancies to well over 1,000 in the past couple of months.

There have been changes at the top in Victor, too. Peddle, who set up the original Sirius Systems Technology and headed Victor Technologies after the merger of Sirius with the Victor Business Systems subsidiary of its backer the Kidde Corporation, has moved aside in favour of a more experienced manager – as Adam Osborne did at Osborne Computer. Richard Couch has come in as chief executive officer, leaving Peddle more a figurehead.

Victor's main problem seems to have been a shortage of disc drives, leading to delivery problems, and in having an over-heavy sales force. The timing of its product did not help either.

While the Sirius has been a runaway success for UK distributor ACT, because it got in before IBM, in the US the Victor 9000 appeared on the scene concurrently with the IBM PC.

"If you start the same day as IBM you've not much chance, even with brilliant technical people," observes ACT (Sirius) managing director Ed Sherman.

Now Victor's problem is trying to turn a 60-year-old company set in the ways of selling calculators and business equipment to micros.

New goodies are on the way for Victor – ACT's UK-grown Apricot for one. ACT will start shipping Apricots over to Victor in the US in January.

In the meantime, Victor's major backer Kidde is prepared to invest more money to tide it over – saving it from Osborne's immediate fate.

PEDDLE . . . Steps aside as Victor struggles.

Elan is late for Christmas dash

by Caroline Burgess

A BRITISH newcomer to the cut-throat home computer game, Elan Computers, previewed its first product last week. But the £200 micro – the Enterprise 64 – will not hit the shops till next spring, missing out on the expected Christmas sales boom.

"It is a product for the future," said Elan's chairman Lachu Mahtani, adding that he was not worried about competition because of his confidence in the product.

Marketing manager Michael Shirley was equally bullish. "If there is only a handful of home computer companies in two or three years, we shall be one of them," he said.

Elan's hopes for market share – 10% in the UK market next year – are based on the technical features of the machine. "We have an unrivalled product," claimed technical director Robert Madge. Design and production of hardware and software are in the hands of London-based Intelligent Software.

The Enterprise 64 is built around a Z80A processor and offers plenty in the way of memory, stereo sound and colour graphics.

It starts off with 64K of RAM expandable through add-on units to 3.9 megabytes. The RAM expansion units, like the 3½-inch microfloppy drives, clip directly on to the side of the keyboard console with its integral joystick, or can be stacked up separately, with plastic trunking to tidy up the nest of connecting cables.

Software for the machine will centre around games packages and educational programs on cassette or ROM cartridge, with some business applications. Languages will include Forth and Lisp as well as Basic. A word processor is built in.

Elan Computers was formed in 1982 by two unnamed international companies to produce and market the Enterprise range of home computers. Its aim is a 10% share of the UK market next year.

Mahtani plans to manufacture 150,000 units in Elan's UK factories in the coming year and hopes to be trading at a rate of £10 to £20 million by the end of 1984. This should put Elan on course for profit in 1985, he said.

But with the Enterprise, Elan is aiming squarely at a market for which many companies are fighting hard. Price cutting is rife, particularly in the US.

By next spring a base price of £200 for a 64K eight-bit colour machine seems bound to be at the high end of the range.

Elan plans a £2½ million advertising campaign, including television and press adverts and exhibiting at shows. It will sell Enterprise through major retailers.

Micro News is compiled by Robert Parry

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CONTROL DATA

SOFTWARE FILE

£1,000 kit for school winners

PRIZES in next year's schools software competition sponsored by Barclay's Bank have been increased by 50%.

More than 100 schools are expected to enter the competition and the closing date is February 29, 1984. The winning students of the two classes, under 19 and under 16, will each get computing equipment valued at £1,000 and the two runners-up will be able to choose kit for £500. Third and fourth prizes rate £300 and £200.

The event, organised by Kent University, is intended to attract only serious programs which can later be used commercially. In previous years the students' programs have been taken on by such companies as a Spar local grocery shop, an hotel in Newquay, Cornwall, a double-glazing business, a draper's store and a Yorkshire newspaper chain. Winning entries to carry off the Kent Software Trophies in 1982 went to Wadebridge School in Cornwall for the junior class, and Amersham Grammar School for the senior class.

Aussie tour

UK SOFTWARE vendors are being invited to join a promotional tour to Australia and New Zealand to sell British products. Ayre Associates, a Surrey company which specialises in marketing, has arranged a tour to Perth, Melbourne, Sydney, Wellington and Auckland to interest dealers and arrange distribution of products. Software houses which wish to join in will be charged £2,400 for the privilege of having their applications demonstrated to selected dealers.

More choice

US MINI maker Perkin-Elmer has broadened its options under the Unix multi-user operating system with three new compilers and a word processing system. The compilers are Sibol, which allows DEC Dibol programs to run under Unix, Coral-66 and RM/Cobol. The word processor is Ace Microsystems' Lex/32.

Partners

ICL is to take its Partnership-25 scheme, a joint venture with software houses to promote the System 25 mini, to Southern Europe next month. Firms from Austria, Switzerland, France, Spain, Portugal, Italy and Greece will be invited. They will join the list of 24 North European partners ICL convened in Brussels last week.

Software File is compiled by George Black

Claire Gooding reports from the European Unix User Group (EUUG) meeting in Dubl

Newcastle fails t give the answers

RANDELL . . . "Anything of any merit has an ancestry."

NO-ONE has yet solved the problem of networking under Unix and the Newcastle Connection is far from being the ultimate answer. That was the message from a stormy debate at the European Unix User Group in Dublin.

The Newcastle Connection, originally known as Unix United, seems to have united most Unix followers against it.

The researchers and academic users of Unix who largely make up the EUUG membership claim it has been pushed as a universal panacea to Unix networking problems.

The system, developed by Newcastle University and MARI, the Newcastle-based Microelectronics Applications Research Institute, has had much commercial success, but no-one was in Dublin to defend it.

"Unix was not designed as a networking system in the first place and the way to make it into one is not to load it down with extras," said David Tilbrook of Imperial Software Technology. "The Newcastle Connection is not really new: it's been done before and proved to be grossly inefficient."

Others who have used the Newcastle Connection said it was too unreliable and cumbersome for commercial use or simply did not work. Connection author Brian Randell later denied that it had ever been presented as completely new or as a panacea.

"Anything of any merit these days has an ancestry," he said. "Nor have we said it was networking software. It only uses networking software."

Tilbrook dismissed most attempts at networking Unix as a way of distributing bits, not information. "I don't care how the message reaches me, but I don't want to have to figure out what it was."

He is supported by many EUUG members in believing that Unix files and I/O techniques need total restructuring if the system is to be successfully networked.

Teus Hagen, of the Stichting Mathematische Centrum, disputed the need for the networked products on offer. "Most people just rely on the plain old telephone," he said.

Several solutions are available since pressure from the commercial users of Unix made a major issue of networking. The U-Net system from 3-Com uses Ethernet techniques, which limit the distance covered, while Ungermann-Bass's Net/One uses broad band which is expensive a dismissed by Hagen as "tota facturer dependent".

The Newcastle Connectio the ring technique, which that all programs are polle whether they are for netw This loads the system so that non-networked users their programs pay a pen degraded performance.

So far protocols and stan have divided, not guided, the community. "People who protocols too often don't programs," said Peter Colli the University of Kent. should have to implement they design sitting round the mittee table before other forced to accept it."

The latest release of Be University's respected software, release 4.2, do pretend to be an answer. It vides tools for users to im their own answers rather t ing a single network vehicle.

The supplier likely to hav influence is the owner of AT&T. Its research divisi Laboratories, is said to be embryo product called but the marketing arm, W Electric, is maintaining silence.

Unix gets DEC approval

MINICOMPUTER manufacturer DEC has put its stamp of approval on the Unix system by becoming a supplier. DEC put its Unix software, called V7M-11, on show for the first time at the European Unix User Group meeting.

DEC's arrival as a supplier is being hailed by some as the final "legitimisation" of the system, comparable to IBM's endorsement of the micro market. DEC has licenced the system from its owner Western Electric to sell with its own operating systems such as RSX-11M.

The company raised some eyebrows by plumping for Version VII of Unix, now superceded by System III. But by choosing Version VII DEC has ensured that its Unix will run on the entire range of PDP-11 machines, which have long been a vehicle for Unix in the academic community. For its Vax version, announced but not released, DEC has gone to Berkeley.

In the opinion of many users, Berkeley has done more than the originator Bell Labs to make Unix robust enough for a commercial environment.

Michael Tilson, vice-president of Human Computer Resources, sees DEC's move as a boost for the entire Unix community. "Now that DEC has legitimised the market, the number of users is bound to go up worldwide. IBM will come in soon and others sizeable manufacturers will follow."

IBM already supplies Unix on the Series 1 mini and has long held a source licence. As yet its Unix operations have been low-key.

Tilson's caveat about DEC is that it may not include all users need. HCR supplies its own Unix for DEC kit called Unity, with extras such as the relational database Mistress.

"It's as well for purchasers to find out what costs extra," said Tilson.

Standardisation is no up to us — AT&T

AT&T stayed on the fence while users argued last week about standardisation of Unix. The biggest concern among delegates to the European Unix User Group meeting was that the Unix operating system should not lose the portability which made it popular.

But the originator and owner of the system, AT&T, is not prepared to arbitrate, and users who look to it for a standard will be disappointed.

"We are committed to Unix and we want to see it standardised," said AT&T marketing operations district manager Jim Kennedy. "We agree that a standard needs to be set up and Bell is represented in the arrangements, but it's not up to us to dictate them."

Unix licensing manager Bill Murphy emphasised that the users themselves must demand and create standards. Proposals, by the standards group of the US/USR GROUP/users' organisation are the subject of a bitter debate.

The degree to which li diversifying is worrying so mercial users who do not see the system's port sacrificed. Academic and users all want to see th methods adopted, but Be University, which has cont a great deal to making Unix mercially sound, has inst methods disapproved of by p

Bob Pike, a researcher at Labs, said some of Berk additions did the operating a disservice by making it ne sarily complex. "A lot of the options offered really belon where," he said.

Another area highlighte Pike as needing a standard i scrolling technique still se screens from the days printing terminals allowed keep track of long lists of

"There are a lot of probl bringing an operating sy the 1970s into the 80s, the user interface area,"

Bell could release first 'window' terminal

UNIX originator Bell Labs, may yet beat its competitors to supplying a Unix terminal which supports "windows". The Blit terminal, used by researcher Bob Pike at Bell in his work as a programmer, is being prepared for release as a product.

The Blit allows programmers to use a mouse controller to open up windows on the screen. Several different processes can be represented at once and the user can jump between one window and another, for example using one window to debug a program in another.

The window technique has attracted several Unix developers as the most friendly and practical method of dealing with a multi-user operating system. But the most promising contender, Sun Microsystems, has so far failed to deliver. Only a limited prototype has been seen and US users may have lost enthusiasm for Sun.

The Blit has been given a delivery date of December, and the price should be about $6,000.

FIRNBERG & YATES
TELECOMMUNICATIONS:
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White House system soon to be marketed in UK

A MAINFRAME database system which is used in the White House will soon be marketed in Britain.

It is the Model 204 database software from he Computer Corporation of America, based in Cambridge, Massachusetts. CCA has just reached agreement with another American firm, Tesdata, to market the product in Europe.

Model 204 has gained about 140 users in the US since it was put on sale two years ago and could prove a strong challenger to established vendors on this side of the Atlantic, such as Cincom, Cullinet and Software AG (the Adabas people).

CCA began in 1965 as a purely research and development outfit — as late as 1980 it still had only one salesman. Model 204 was first sold to run with the OS IBM operating system but has since developed CMS and DOS versions.

White House technology on its way to UK.

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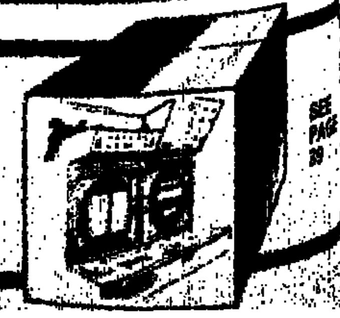

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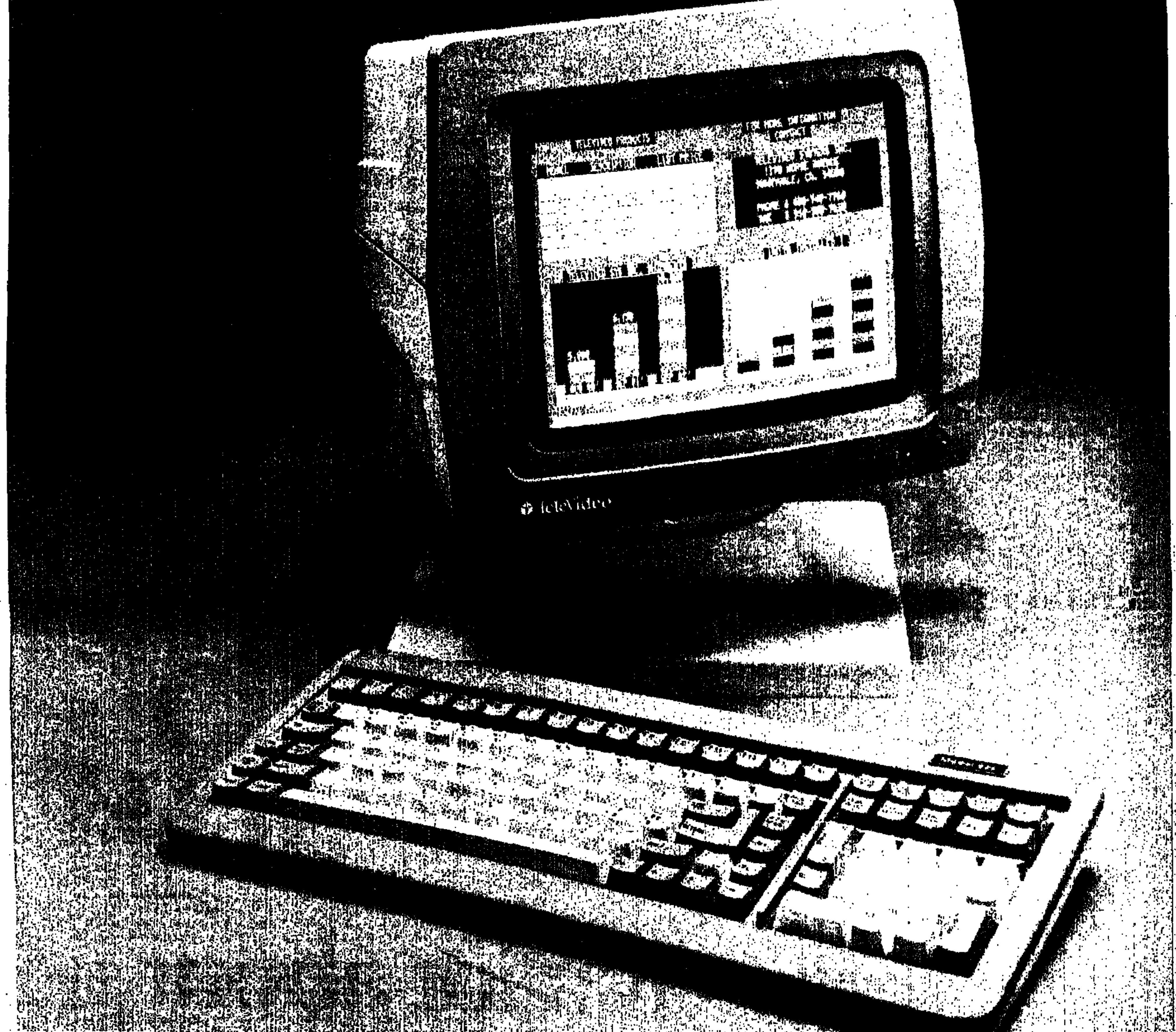

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COMPANY NEWS

Intereurope sales grow as it makes another profit

by Philip Hunter

A FIRM with a reputation for producing high quality documentation for both hardware and software is unlikely to ride on a South Sea bubble, but is in a good position to enjoy sustained real growth. Such is the case with Wokingham-based Intereurope Technology Services, which last summer joined the Unlisted Securities Market, and has just reported its sixth successful year of profit and sales growth, for year-end June 30.

This year the pre-tax profit was £873,000 on sales of £6.12 million, compared with £680,000 on £5.4 million last year. The biggest growth was in software documentation, up from 8% to 12% of overall turnover. Documentation as a whole, including hardware and manuals for electronics and avionics, now accounts for 80% of the group business.

The company's share price has also climbed steadily over the last year from its issue price of 110p to its current all-time high of around 190p.

But joint managing director Ed Vallance says the company has no need yet to make a rights issue to raise more cash. The order book is full at £3.6 million, but no greater than last year, so growth this year again looks like being modest.

"I can't see anything wrong with this year," says Vallance.

The only part of the company's business to disappoint in the last year is engineering design and maintenance – a depressed market.

Intereurope says it intends to offer its staff a savings-related share option scheme later this year.

VALLANCE . . . "I can't see anything wrong with this year".

Liquidator sees little hope for Grundy

by Francis Samish

COMPUTING firms are queueing up to talk to the Grundy Business Systems liquidator about the takeover of the company's Newbrain microcomputer operation. But the liquidator, Tim Harris of Deloitte Haskins and Sells, sees little chance of saving the business because the product needs new development backing.

Another snag involves Thorn EMI Datatech, which has been building Newbrains for Grundy. A creditors' meeting early this month heard that the company was not interested in buying the business.

But Harris said a legal question over Thorn EMI's rights had to be sorted out before a sale could be made. "Thorn EMI has a key role," he said.

Harris is meeting five UK and non-UK computing and electronics firms and has had interest from other companies.

But he said: "The chances are pretty slim. People say it is a very good machine but it has been out for some time."

Creditors heard that Grundy Business Systems had debts of just under £2 million but assets of under £700,000. Big creditors included software firm Peachtree, owed £178,000.

Some creditors were angry that Grundy (Teddington) Group was not supporting its company.

They said they had only given such credit because the company was backed by a big group – and by the government's British Technology Group, which owned 30%.

But Grundy group said it would not pay these creditors.

Grundy Business Systems went into liquidation with the loss of 30 jobs because of over-optimistic sales forecasts following a 1982 boom.

Tripled profits forecast for US chip maker

by Philip Hunter

WALL STREET analysts are predicting a boom for the US maker of integrated circuits Advanced Micro Devices. The immediate forecast is for net profits of about $12 million on sales of $125 million for the company's second quarter ending September 30. This compares with profit of about $4 million on sales of $86 million for the equivalent quarter last year.

The main reason for the growth is the microcomputer boom, which is more than making up for loss of business to Japanese competitors. Particularly successful in the last year has been AMD's second sourcing of Intel 8086 chips.

Intel has found it difficult to supply all the 8086s wanted and has found lead times for the products sliding. AMD has come under more pressure to supply the chips, and in May its own lead times for the 8086 slumped from eight weeks to as much as 20 weeks.

The company says it will double its capital spending and increase staff by 20% to meet the demand.

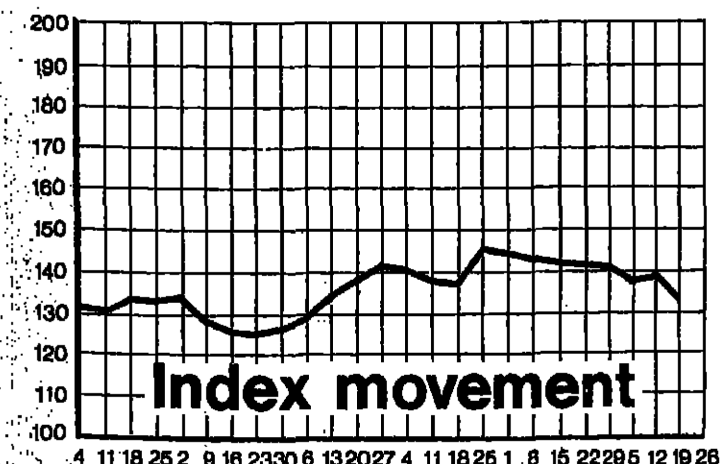
SHARES TABLE

The shares table, which is specially compiled for Computer Weekly, shows selected computer companies that reflect the state of the computer industry.

Date 15/9/83 Index 133 63 Change –5.24

Pence 1983 High	Pence 1983 Low	London Stock Exchange Stock	Pence Price	C'nge	$ 1983 High	$ 1983 Low	US Stock Stock	$ Price	C'nge
326	298	Abingworth (10p)	302	– 4	29	15¼	Amdahl	19	+ 1⅜
545	240	ACT (App Com) (25p)	375	–60	60	29¼	Apple Inc	29¼	– 2½
88	41	B. Bov Kent (25p)	70	– 1½	50	34¾	Auto Data Pro	37½	– 2
183	124	Chubb (20p)	140	–10	57¼	43¼	Burroughs	54¾	– ¼
178	120	Cole Group (25p)	122	– 8	18	11¼	Comp Auto	11½	– 1½
385	152	CASE (20p)	373	–12	23	17	Comp Sciences	17½	– ½
655	540	De La Rue (25p)	570	–35	14¼	9½	Comshare	14¾	+ 1½
378	284	Extel (25p)	363	–	62½	38¾	Control Data	53¾	– 2½
689	411	Ferranti (50p)	581	– 1	51	37¼	Cray Research	42½	+ 2
248	189	GEC (5p)	189	–22	73	41	Data General	59½	– 1½
82	58	ICL (25p)	58	– 7	25	18¼	Datapoint	25	+ 2¼
83	41	Kalamazoo (10p)	57	–	127¾	95	Digital Equip	103⅝	– 1¾
378	275	Kode Int (25p)	333	–27	40½	23½	Elec Data Sys	38¾	– 1
520	270	Memec (10p)	492	– 3	15¾	5¼	Gen Automation	10¾	– 1
190	130	Muirhead (25p)	132	– 8	43¾	19¾	Gould	36½	+ 2
690	455	N'market (1981) ($0.05)	565	–30	51	35¾	Harris	38¾	+ ½
2700	987	Norsk Data	2325	–275	48	37	Hewlett Packard	43¾	+ ¼
320	207	Office & Elect (25p)	233	–12	125	85	Honeywell	120	– 5
1238	710	Philips Lamp (Fl 10)	1032	–74	44¼	20¼	Intel	41¼	– 3
256	178	Plessey (25p)	202	+ 4	126	95½	IBM	123½	+ 1¼
50	18	Quest Auto (10p)	22	–	71¾	54½	Litton Ind.	62½	– 1
297	209	Racal Elect (25p)	217	– 8	17¾	12¼	MDS (Mohawk D)	12⅜	– ¼
320	225	Star Comp (10p)	295	+10	32¾	19	MSA (Mgmnt Sci)	25⅝	– ⅜
610	275	Systems Des (10p)	490	– 8	18½	9¾	Mngmnt Assist	11½	+ 1¾
619	418	Thorn-EMI (25p)	592	–27	16	9½	Modular	13	– 1
177	135	UC&T (50p)	150	– 7	148	84½	Motorola	134½	– 4
167	130	United Leasing (20p)	158	+ 3	57	26¼	National Semi	54¾	–
		Unlisted Securities			124½	87½	NCR	120¾	– 2¾
125	75	Bus Comp (10p)	80	–	36½	24	Perkin-Elmer	36½	+ ¼
130	97	CPU (5p)	97	– 8	29½	15	Prime	15½	– ⅜
180	115	Cifer (10p)	145	– 8	58¾	44½	Raytheon	45¾	– 1⅛
400	145	Consult (C&F) (10p)	400	+35	37½	28¼	Signal	36¾	+ ¼
275	197	Feedback (10p)	272	– 1	45¾	33½	Sperry Comp	43⅜	– 2
210	155	Int'europe Tech (20p)	210	+ 5	24½	16	Storage Tech	16	– 1½
54	27	J.S.D. (5p)	34	– 5	34¼	24⅜	Tandem	31¼	– 3
85	70	M.M.T. (5p)	80	–	62¼	37¾	Tandy	41½	– 1½
300	180	Memory Comp (IR10p)	280	–	171	108¾	Texas Inst	123¼	+ 8¼
485	205	Micro Bus (10p)	485	+25	26½	16½	Tymshare	26½	+ 1½
620	265	Micro Focus (10p)	620	+40	40¾	31¼	Wang Lab B	33½	+ 1½
445	310	Microgen (10p)	420	+10	17	9½	Wyly	13	– ¼
212	136	Miles 33 (10p)	212	+15					
84	51	Mnemos (10p)	82	– 2					
230	168	NMW (£1)	230	+ 5					
187	170	Real Time (5p)	187	–					
120	81	Rolfe & Nolan (10p)	117	+ 2					
197	110	ScanData (10p)	180	–					
85	78	Tech for Business (10p)	83	–					
80	63	Trident Comp (10p)	67	–					
107	65	Zygal Dyn (5p)	100	–					

The table shows the closing prices on Thursday. The Share Index is based on the prices of the UK companies in the table. Highs and Lows have been adjusted where necessary.



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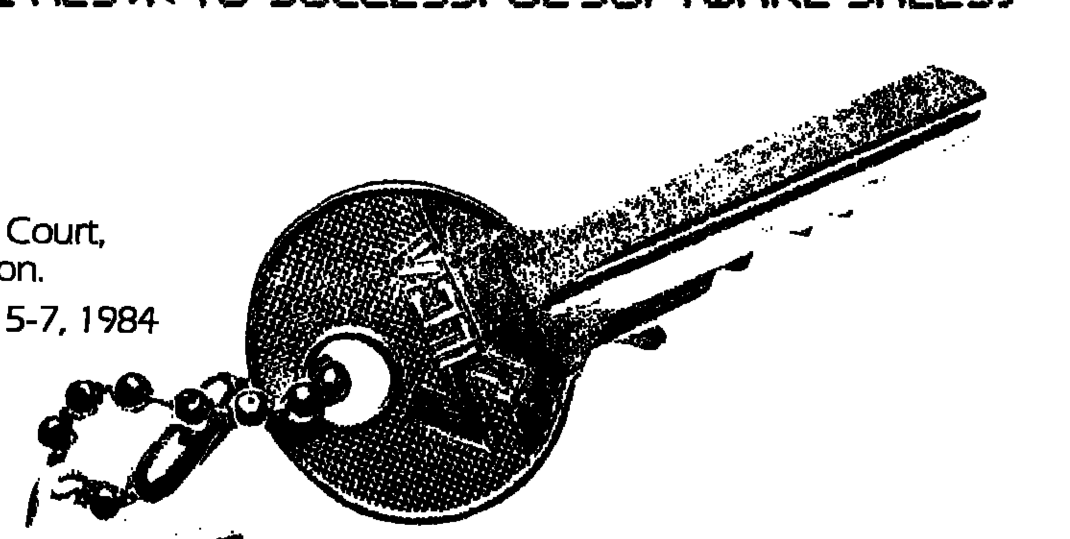

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software '84
EXHIBITION AND CONFERENCE

PLATFORM

Robert Howells is president of National Advanced Systems (Europe).

The PCMs view new IBM plan as a paper tiger

"FROM what I hear about IBM lately, you PCMs are in for a really hard time. Are you sure you can follow the leader when it is moving at such an explosive pace?"

This question was asked when I met the director of one of Europe's largest DP operations, during a recent visit. He had just read the recent *Fortune* article entitled "Meet the new lean and mean IBM" and the *Time* cover story "The colussus that works". He sincerely wanted to know if my company, one of the largest PCM competitors to IBM, had actually felt the ground tremble and, as a result, was the loose earth about to cover our remains.

With a bit of licence, I quoted Mark Twain: "Contrary to what appears in the Press, reports of our death are exaggerated." I spent the first three courses of our luncheon explaining to my companion that a group of companies that had built an industry with a combined annual turnover over $2.5 billion was not about to roll over and die just because IBM was attempting to make the game tougher.

At long last, IBM has decided to alter significantly its marketing strategy. It now feels considerably less inhibited by government constraints; is obsoleting its current products at an accelerated rate; is willing to make special deals on prices and is stirring the rumour mills as never before on new product announcements.

There is no doubt that underestimating IBM could become a very short route to the graveyard and the PCMs have learned this lesson well. But they, as well as the users they serve, are not about to let the born-again giant from Armonk return to the good old days when IBM set the industry standards and dictated prices, performance and progress.

It is no longer assumed in the PCM industry that what is good for IBM is automatically good for users. It was the needs of the users that led to the birth of the PCM industry. Today the standards of the industry are the standards of the users. To many of them, IBM is another PCM company, though it just happens to be the biggest.

So users, as well as PCMs are concerned when IBM objectives are spelt out. *Fortune* recently quoted IBM vice-president Buck Rogers as saying: "It is no secret. We want all the business if we can get it."

This brings back memories of the control IBM used to have over the user community and the positive benefits that PCMs brought to the market.

The first, and perhaps most important of these, was the decontrolling of the market from one company's dominance to a genuine choice of alternatives. Users are now free to select hardware suppliers without contemplating the major upheaval that a change in operating systems could entail.

No longer are new products introduced at the convenience of IBM, but rather on the application of the latest technology to meet user demands. Reliability has become an important consideration, now there are alternatives. It is no longer necessary to accept frequent hardware failures as normal.

The PCMs have provided a buffer against planned obsolescence in IBM products and allowed customers to use their equipment longer than IBM might wish. In many instances, PCMs have kept their products more compatible than competing IBM products by continuing to enhance them functionally.

The record of the National Advanced Systems' AS7000 and AS9000 families or the older Amdahl 470 family provides proof. For the user this has brought a significant increase in his return on investment with these products.

Objective price/performance evaluations can now be realistically made, not only of a hardware but also of service and support. In fact, new standards for customer support for hardware and software have been attributed to the PCM industry. I frequently have customers tell me about the significant improvement that has been made by IBM *after* they installed their PCM machine.

But the user alone cannot prevent the re-emergence of IBM dominance. It is the major PCMs that will defend their market position, despite current speculation to the contrary about revolutionary IBM strategies and tactics. The technology and the architectual flexibility of the major PCMs will allow them to continue to track IBM competitively.

The myth still persists that IBM leads and the PCMs slavishly copy. Nothing could be further from the truth. Amdahl's V-6 for example was faster than anything IBM had at the time when it was introduced. NAS 9000 series was the world's largest commercial computer well before IBM launched the 3081, and its AS9080 is the fastest commercial computer generally available today.

On semiconductor technology, the PCMs are regarded as far closer to the leading edge than IBM. A telling example is that professional IBM watchers forecast that IBM is planning to move to ECL gate-array technology on the Sierra series, while the PCMs have been there for several years and are now set to venture in new directions.

On technology, reliability, price/performance, service and support, the PCMs have demonstrated that they can compete with IBM very effectively. The industry's objectives are not to attempt to topple IBM from its position of dominance but rather to offer the users genuine alternatives. I don't believe anyone would suggest growth potential in the DP industry is waning. But PCMs expect to get their fair share of this growth potential. We are far from ready to call in the grave-diggers.

Robert Howells

10 YEARS AGO

FROM COMPUTER WEEKLY OF SEPTEMBER 20, 1973: ICL signed an agreement with Sogeti of France with the intention of co-operating on European software projects . . . In a judgment of far-reaching implications for the computer industry a US court ordered IBM to pay damages of $352.5 million to Telex. It was alleged that IBM had adopted marketing strategies which were tending to eliminate Telex as a viable competitor in peripherals . . . Altergo (Software) announced its intention to market packages in the US, and to set up a New York office . . . Compec 73 opened at Brighton's Metropole Centre, and attracted 69 exhibitors and 4,014 visitors over the three days .

PROFILE

Man who has changed DEC's fortunes in UK

DIGITAL Equipment's UK managing director, Darryl Barbé, is proud to be "one of the real Californians", tracing his family back four generations there. He readily notes the irony that, although he is very attached to California, he has spent much of his working life abroad – the last seven years in the UK.

After graduating in economics at the local Stanford University in the early 1960s he joined Hewlett-Packard. He did not come into contact with computers at that stage: "It was in the pre-computer days, when Hewlett-Packard concentrated on electronics and test equipment," he says.

by John Riley

While with the company he got his MBA (Master of Business Administration) degree. Not long afterwards, he was faced with the choice of leaving California or leaving the electronics business. He chose the latter, and moved into a completely different field – sugar refining.

Paradoxically, it was at the sugar refining and marketing company he joined that he developed his interest in computers. He designed an inventory control system, but comments, with a smile: "I left before it was tested." His interest in computers next landed him a job with Singer Business Machines, which finally lured him out of California.

He stayed with Singer for eight years, including a year in New York and six in Europe, where he did "everything from sales and marketing to long-range planning," and ended up running the company's South African operation for a year.

BARBE . . . Computers wooed him from the Californian sun.

He joined DEC early in 1974 and went to Geneva to set up its European commercial marketing operation, and after three years came as managing director to the UK, where he has been ever since.

"It has been very satisfying to see DEC UK rise from 1,000 to 3,000 people and become the third largest supplier in the UK over that time," he says. It is also satisfying for him to hear traditional batch-oriented vendors now talking aggressively about distributed data processing. "DEC moved into that 10 years ago," he comments.

Barbé thinks highly of the UK market: "The British market is 18 months ahead of any continental market," he says. "Suppliers and users are more entrepreneurially spirited and more willing to take risks."

In spite of the poor economic climate in the UK, Barbe has increased DEC UK's sales by 21% to £210.1 million last year. By comparison DEC worldwide took a 32% overall drop in profits. Barbé has also been busy implementing sweeping changes within DEC's European organisation, where operational responsibility has been given back to each country.

Looking to the future, Barbe sees the cost/functionality ratio continuing to accelerate: "It boggles one's mind to see how quickly it's developing," he says. He foresees the application of intelligent computing to an "[...] range of applications".

Over the past 10 years companies such as DEC have [...] vond basic hardware [...] into applications: "Our [...] and sales people now [...] about application areas", [...] Barbe. But he is adamant [...] DEC is interested in its OEM [...] that the strategy of increasing capability of products is "[...] mentary with a strong OEM programme".

"The personal computer is our key focus market," he [...] "and we are also focusing on [...] automation, and CAD/CAM [...] that does not mean we are [...] ing from our traditional areas [...] education, science and [...]

"It's a question of [...] right marketing mix. We [...] get the right balance between growth and lower profit on [...] hand, and slow growth with [...] return on the other."

He sees the future [...] "In 15 years," he says, "[...] be able to buy a device [...] worry about how it connects [...] it'll just be plugged into [...] area network and there [...] worry about standards [...] cal restrictions."

On the future, Barbé [...] "In 15 years' time it will [...] nature for the young people growing up with computers [...] them, so you won't get the [...] hesitancy of today's de[...] makers." And he thinks [...] 100 years' time people [...] back on the current period [...] major departure for Western [...] ture – not on the same scale [...] invention of the wheel, but [...] major breakthrough."

DOWNTIME

Weyer's the problem?

THE many enemies of the *Daily Mirror's* columnist Paul Foot slam him as the fighter of lost causes. But many company directors have had good reason to fear Foot's probing telephone.

British Telecom's new deputy chairman Deryk Vander Weyer, however, seems to have kept his nerve when Foot put on his boots to attack his appointment. What, Foot asked, did British Telecom think of the appointment of a deputy chairman who was still on the board of Barclay's Bank, which owns a fifth of BT's competitor Mercury?

BT was courteous if slightly evasive with its reply that the appointment was a welcome and obvious one, as Weyer had been a non-executive member of BT's board for some time and had wide experience in the City, just what the board needed to see it through privatisation.

This sounds reasonable, but Weyer yielded to the temptation of splitting hairs, by saying: "The board of BT is confident, as I am, that there is no conflict of interest. The shareholding in Mercury is held by Barclays Merchant bank, a subsidiary. I am not on the board and take no part in the merchant bank's management."

When first is last

WHEN somebody claims a first in our industry, the cynical part of my brain is alerted. So I thought hard when I read that the independent television company Central was to undertake a first in broadcasting by sending an entire computer program over the air.

What about BBC's Tomorrow's World? Surely, they tried this wheeze over a year ago? Poor old ITV. Two weeks behind with breakfast TV, and now a year behind with computer programs.

Todd beats US Army

NOT many people can boast they've built a walking robot in their garage. Indeed Dave Todd, who made the delightful structure in my picture, has no real competitors in England to the best of my knowledge.

His main competititors are American universities developing robots for the US army. These have proved difficult and expensive, the chief problem being to prevent them losing their balance on steep slopes and when negotiating obstacles.

Todd's pet, named Marvin, finds fallen tree trunks insurmountable, but with its low centre of gravity, it easily gets over obstacles.

Todd works full time [...] Natural Environment [...] Council, but he used to [...] robots for disabled people [...] Queen Mary College. He hopes to come back to [...] robotics research and building [...] mechanical woodlouse for [...] ting ecological samples from [...] gerous ground.

There's something at the bottom of my garden.

ComputerWeekly

Quadrant House, The Quadrant, Sutton, Surrey SM2 5AS

Thursday, September 22, 1983

The age of the user dawns

THE future will be packaged. This is a message that the software houses that specialise in packaged programs have been trying to get across for about 10 years. And as the *Computer Weekly*-IDC report shows, it is one that the computer users of the UK have finally taken to heart. The delay has been caused almost as much by the innate conservatism of the traditional installation as it has been by the time that the software houses took to refine their products to an acceptable level.

The use of packages is a major step in bringing the advantages of computers to the DP industry itself – in this case to the shop floor or coding rooms of the large installations. Many people who believed the slogan of the 1960s that "computers would take the drudgery out of clerical work" wondered about the reality of it when first faced with the large coding halls where the systems of the time were constructed.

Packages will certainly relieve some of this drudgery. But they will impose other burdens on DP staff. They will have to become more professional and more concerned with the end user.

In the same way the programmers will have to have a better understanding of the needs of the end users and of their own specialised methods of working.

There will be little call for the straightforward technician, the Cobol coder, super or otherwise, in the installations of the future.

The DP manager will have similar problems. DP expenditure has slipped away from him. End users are defining their own systems and buying them without reference to the computer departments.

Rather than bemoan this loss of control the DP manager will have to become more involved in the work that the installation is supporting. Even with the best of packages there is a need for an evaluation by someone with a technical background. But this evaluation will be useless unless made in the context of the users' needs.

To satisfy those needs the DP manager will need not only to have a full command of his own skills but a thorough understanding of the aims of the organisation. For a long time these did not get sufficient attention from computer staff engrossed in the technicalities of their own industry. The eighties will be the age of the user.

The feeble French

JUST who do the French think they are? This month the French government has gone bleating to its EEC partners about competition from the US and Japan and calling for import barriers. It wants its neighbours to encourage mergers of high-technology companies across national frontiers.

And this week Machines Bull chairman Jacques Stern called on European countries to "mobilise all Europe's forces" to develop a supercomputer.

All this sounds fine in theory. But underneath it all is the feeling of desperation which surrounds the feeble French computing and electronics industry.

The national computer manufacturer has staggered from year to year – last year its losses were £1 million. And the joke is that it uses Honeywell products built under licence. Meanwhile a five-year plan to put the French industry on a par with Japan and the US is far short of its goal.

In the computing industry they have given their companies more protection than any other European country because of the large number of "commercial" organisations such as banks which are covered by government procurement policies.

Collaboration is to be encouraged: ICL, Siemens and Machines Bull are to be congratulated for setting up a joint research centre in expert systems.

But such collaboration must be from equal positions of strength – not simply to bail out a desperate partner which cannot survive on its own – and which might pull out if circumstances change in its favour.

1984 and all that . . .

THIS week's example of the strange things people say about computers was sent in by P. J. Warr of Sevenoaks, Kent, who wins £5.

Bit, bug, byte, decollator, deck, dump, fallover, font, gigo, hertz, link, load, modem, package, patch, protocol, ram, rom, table, text.

The above words are all used by computer experts. What funny people! – and no wonder computers get blamed for everything.

County Border News (Sevenoaks edition).

LETTERS

Some dealers do give back-up

PERSONAL computer sales increase consistently year by year. At the same time so does the dealer's responsibility to service end-users comprehensively. Recently, in an article by David Ferris (*Computer Weekly* August 4) it was suggested that dealers are unable or unwilling to supply the kind of back-up needed to support fully a modern personal computer system. It is important to clarify this statement in the context of modern sales strategies.

When personal computers first began to sell in substantial quantities, not every group involved in their sales had the correct qualities or motivation. Like any high growth industry, the personal computer market attracted the quick buck men whose philosophy was "stack 'em high, sell 'em cheap, then forget them." Then there were the technocrats: great in technical knowledge, but ineffective as salesmen. However, as the computer industry matured, so did the distribution methods.

Dealer networks are now far more structured and co-ordinated. For example Apple Computer's dealer network now has a council where, bi-monthly, ideas, common problems and solutions can be discussed with personnel from Apple. This dealer council underlines a belief that service and back-up are an integral part of running a successful computer business.

However, dealers can only go part of the way to ensure that the personal computer industry has a good reputation for service. End-users are attracted by low prices, and low prices can spell disaster as far as service and back-up are concerned. Therefore it is up to the buyer to choose a reputable dealership where the word support figures highly. They must choose a company that reflects sound organisation.

David Ferris seemed to have looked purely at retail outlets where computers are only one line in a vast range of electronic hardware, but, as personal computer software has become more specialised, so have dealerships. Today one can find dealers who concentrate on one-to-one sales, a particular vertical market or communications based systems. With this specialisation, dealers have not only realised the importance of post-sales maintenance support but also areas such as training and advice on system expansion.

Today the majority of personal computer dealers, like ourselves at Albion, are well aware that support has to be on-going if their business is to expand and remain competitive. "Raising the level of comfort of the end-user" is the dealers motto today and the formation of organisations such as a dealer council underline the strong desire to maintain that comfort.

STUART BOWDEN
Albion Computers
London.

Logica had five founders — not three

YOUR Profile (September 8) reveals Philip Hughes' memory to be either poor or selective regarding the early days of Logica.

Three of Logica's founders are still with the company; two are not. This is no reason to claim that Logica was started by three people. For the record, the others of the founding group were Steve Feldman and myself.

Philip Hughes' explanation for the origin of the holding company is strange. Apparently it was "established in Holland, before Britain joined the EEC, to give a . . . solid foothold in continental markets".

A moment's thought will suggest this to be nonsense. Overseas holding companies are generally a fiscal or legal device with little bearing on operations. (How many major UK exporters find it necessary to resort to holding structures of this kind?)

The truth was simpler, more parochial, and showed foresight of an altogether different kind. It was also — dare I say it? — not very socialist. Before Logica even opened its doors for trading there was an agreement with its backers, Planning Research Corporation, for PRC to acquire subsequent majority ownership. The Netherlands holding company was to expedite the transfer of shares under the Bank of England regulations applying at the time.

Inter alia, it was intended to relieve the founding and staff shareholders of the burden of paying dollar premium on the proceeds of sale, although in the event, after a lengthy tussle with the Bank of England, it did not.

None of which would matter now, some 14 years on, except that company chairmen ought not to launder the past. It smacks too much of what I believe the left-wing call revisionism.

JOHN McNEIL
London.

Software for engineering

THANK you for the coverage you provided for Oasys in the September 8 issue of *Computer Weekly*. Unfortunately there are a number of inaccuracies in the piece.

Although what you say about the Ove Arup Partnership's reputation for good architecture is correct, the Partnership is known equally well for its structural and building services work. This is reflected in the fact that the majority of our software products are concerned with engineering analysis and design, and not architectural design, as implied in several places in your article.

It is true that we intend to utilise agents to promote our software more widely. However, we also propose to continue to market certain products directly, both from our London office and through Oasys Ireland in Dublin. The situation at the moment is that the Hewlett-Packard 9845 suite of programs is marketed directly by Oasys in London.

The same programs are available on the HP80 and 200 series and are marketed by Integer in England, Scotland and Wales, and by Oasys Ireland in other territories. The Fortran structural analysis and design prgrams are handled by Strucom for DEC and Data General and by GECS for Prime users. Perq Cadraw is marketed both from Oasys and Maxicomp.

BRYAN SEYMOUR
Oasys
London.

The novice and the cult

RECENTLY I started to do research into the political, economic and social consequences of home computers. I have become so fascinated by the world of computers, a world in which I am a mere novice, that I find I have extended my brief to include such uses as judicial decisions by computers, the use of computers for the legal profession, computer crimes, the use of home computers by disabled people, the legal problems and the legal protection associated with computers and information retrieval systems, and the cult of the home computer "phreaks".

My intention is to write articles, papers, popular books as sole author and serious books comprising various papers.

I estimate my research working full time will take between one and two years but until I have finished my research I am not exactly sure what final form the project will take.

Any help, suggestions, or loans of equipment would be much appreciated.

Dr JOHN SMITH
22a Crossley Street
London N7 8PD.

Stop this whingeing

ONE of the most innovative lines of research in the semantic network of computing is artificial intelligence (AI). Without it, computing is just a symbol manipulating, collating, machine for the adders of the world.

I'm sure *Computer Weekly* is not just a rag for reptillian hacks. It's a paper to keep us informed of all aspects of computing. Why then such an excuse of an article by Howard Karten, on the AAAI conference in New York?

It was eruditiously naive of him to attend such a conference expecting to hear a "model of elucidation". That there was such a model is without doubt, but it was only illuminating to people with prior knowledge of the discipline in which the topic resides. The speakers were offering to their peers new concepts and research results. Their presentations had to be couched in academic terms, not everyday English.

The speakers expect to be criticised and discussed, and cannot afford to offer their results and deliberations in language open to ambiguity.

There is a need for the clarification of these ideas. Trade papers and journals need reporters capable of seeing through the jargon, grasping the essence of academic research and passing it on to the readers in prose (or at least terms) we can all grasp.

It could still be an exercise in egotistic literary display, but it would serve the purpose of clarification better than the 400 words of whingeing complaint in your September 1 issue.

R. BAUCKHAM
Brighton.

WORKPLACE

A weekend of fuzzy facts from the experts

DOZENS of eager computer scientists were locked out of the recent Expert Systems weekend at North London Polytechnic.

The first day was dominated by the academics, with what few commercial expert system products there are in the UK coming in for a mangling.

Annie Brooking of the London South Bank Polytechnic attacked the UK's expert systems builders for storming in with their products without thinking first.

"All the computer scientists wade in with their wellingtons and do things over again," she grumbled.

Their activities are against the ideas of structured programming fought by the likes of Jackson and Yourdon, she asserted. "It means they haven't learned yet."

Cyberneticist Arnold Arnold was the most entertaining speaker on the first day, but has still failed to convince many that his so-called General Computer Systems Program Generator is a base on which all expert systems could be built, as he claims.

But he does have a knack of disturbing some of the more established members of the artificial intelligence community.

Masoud Yazdani, of Exeter University, usually a competent and articulate speaker, spent nearly half an hour diverting from his prepared speech to give a rambling and often confused defence of established artificial intelligence work, against Arnold's assault.

On a more humdrum note, conference chairman Richard Forsyth spent an hour trying to explain to delegates what work has so far been done on expert systems.

FORSYTH . . . "We have tended to give computers a false sense of accuracy."

He tried to clarify the ideas concealed behind the inevitable jargon the subject has spawned.

There is fuzzy logic for example, which involves giving a numeric value to the truth of an assertion. If a person is 28 years old, you could say it was partly true that he was 29 years old.

But how true is it: 90% say, or 99%? That is one of the crucial issues.

Fuzzy logic is needed because facts are always a bit fuzzy anyway, explains Forsyth. "We have tended in the past to give computers a false sense of accuracy."

Another thing you will often hear expert systems people talking about is the decision tree, one of several possible structures for representing the knowledge and the rules needed to exploit it.

Then there is forward chaining, which involves starting with the evidence and then trying to come to a conclusion. And there is backward chaining, which is the converse process of starting with a hypothesis, and then seeing how well the evidence fits.

In practice expert systems combine forward and backward chaining, since each method on its own has a disadvantage. Backward chaining, for example, tends to be too rigid, with the expert systems model sticking to its hypotheses until the evidence against it is overwhelming.

Brooking put the boot into the government's ALvey proposals for being so slow to materialise and criticised the Japanese for being unrealistic in their goals.

The Japanese aims sounded fine taken one by one, Brooking asserted, but as a corporate plan looked decidedly wonky.

Workplace is compiled by Philip Hunter

A less-than-serious look at word processing by D. Clarkson

Coming soon - a book written by a computer

IT can be argued that the great growth in word processing came initially from within the computer industry itself and was not at first driven by some overwhelming demand from commerce and industry. This is indicative of the early 70s when the use of text editors with minicomputers was necessary for the input of source text files prior to the use of language compilers.

Around this time Basic was viewed by most people in the industry as an intolerable tool for the simpleton. Adventurous individuals began than to find more interesting things to do with text editors.

They became, for one thing, the mainstay for the production of documentation. It was more practical for analysts and programmers to produce their own complete write-up, rather than trust a secretary to read their unintelligible scrawl or make out their mumblings on an dictotape.

Perhaps the greatest incentive to make use of word processing for documentation was the knowledge that more professional, more highly structured and accurate documents could be produced with the embryonic tools available. This discovery was also the process of generating a broad acceptance of word processing.

Then, as now, word processing was used for many peripheral activities such as the production of newsletters and guides for car treasure hunts. People began to improve upon the rudimentary tools available. Word processing for the masses was on its way.

Consider in its wildest sense, creative writing and its relation to word processing: modern society demands that any material of note should not exist in handwritten form, and until the advent of word processing the typewriter was the accepted means of producing documents, either as the final copy or as a prelude to printing.

To the already varied number of routes via which printed matter comes into being has been added those involving word processing. The occasional user will prefer to prepare a longhand draft. Journalists and others with access to professional systems would no doubt prefer to tap in their creative outpouring directly at the keyboard.

No doubt with practice this latter process comes quite naturally, and is no more than a slight extension of using a typewriter directly, with no longhand copy. Or is it?

The typewriter and the word processor are not identical creative environments. The very act of typing something with paper and ribbon, as it is intended to appear, provides a sense of discipline which is not present with the word processor where things can always be changed round afterwards.

In terms of technical development and social implications, word processing is still in its infancy. The cycle of word processing and computer typesetting already possible within the Unix operating system is surely indicative of the way ahead for them front of innovations.

Already packages are implementing spelling dictionaries allow for the deficiencies of operators. Time will surely features like *Roget's Thesaurus* plemented in similiar style, as if the user cannot call to mind alternative phrase or expres the computer will be able to vide one.

How long will it be be book "written" by a compu suddenly thrust upon us sible? Far-fetched?

Reflect on the popular t market – the "Gothics", dice Rippers". The public generally aware that most offerings have a style mapped out by the publisher heroine, who should be t should meet the hero in chapter. He should be a

authority. The length about between 50,000 and 60,0 in 10 chapters, etc, etc.

There is no doubt that processing can lead to the p tion of superior material, is not necessarily created first contact with the mac The word processor allows go back over the material superfluous words can be user-used ones phased out paragraphs added, gram syntax polished to perfection

It is often more practic take away a hard copy whe able and pore over it in pe ments. Thus instead of ende less paper, more can be generated.

There is also the temptat keep touching up the docum an additional comma here, a word there, so that the quality of the world is not better than what would have produced with control methods, it may take hours to produce in real terms.

In all of this, it is assume the operator has successfully tiated the labyrinth of codes, output formats modifications of the particular word sing package. This may be the competent secretary will it regularly. It is unlik however, that the occasional will ever master all the nuan of a major package.

There is no doubt the word processing allows text to be with greater accuracy and with greater ease. It remains seen if the quality can be proved accordingly.

PEOPLE

F International strengthens team

F INTERNATIONAL announces four senior management appointments:

Jenny Williams (above left) has been promoted to Western region manager designate, F International. Previously sales and marketing manager, she has worked within the region for the past 10 years. Earlier this year the region, operating from a sales office in Bicester, Oxfordshire, won F International an ICP Million Dollar Software Seller Award, having achieved a record regional turnover of £1.6 million on 1982.

Jo Connell (above right) becomes Southern region manager designate. She has worked in the region for the past 6½ years as both sales and account manager, and was previously responsible for technical development in the region. Earlier this year she was featured in BBC/TV's "Dahrendorf on Britain" series when F International's innovative home-based work method was the key subject of a programme on alternative employment patterns.

Jennifer Benyon-Tinker (below left) who is appointed as Science and Engineering Manager of F International's new Science and Engineering Division joined the company in 1977. As F International account manager she was previously responsible for a number of major accounts for such leading organisations as British Aerospace and Unilver Research Laboratories.

Appointed UK Financial Controller is **Robert Arrowsmith** (below right). Since joining F International in 1982 his main task has been the computerisation of the company's Accounts Department to provide a fully automated accounting service.

■ **Roger Dence**, previously of market development and product planning for STC Defence Systems, has joined Charles Barker Lyons to head its recently-formed Technology and Industry Division. Dence has held a number of marketing, advertising and public relations positions with STC, and worked previously as Press officer for ITT Components Groupe Europe and the Institution of Electrical Engineers.

■ **Digital Microsystems** is expanding its sales organisation and **Ray Jose** (above) has been appointed field sales manager responsible for national accounts throughout the UK. He joined IBM as a programmer and later worked as a systems analyst. After six years with IBM, he joined Guardian Royal Exchange where he worked on systems analysis and then became a project manager.

■ **Pete & Pam Computers** has added to the strength of its technical sales support department at its London office. **Paul Hammond** joins from Kingston Polytechnic, where he obtained a BA Hons in Business Studies.

■ **David Cooper** has joined Rediffusion Computers as manufacturing co-ordination manager, based at its headquarters in Crawley, Sussex. Cooper previously spent 18 years with Singer (UK), commencing his career there as a prototype wireman and finally being promoted to production services manager. Also joining Rediffusion is **Keith Allen**, as sales manager for the motor and chemical industry within the commercial and industrial sector, based in London. Since 1981 Allen has worked as a sales executive for Allied Business Systems.

■ Appointed commercial systems director for Point Of Sale Services (POSS), **Bob Hance** was previously senior systems consultant. His new duties will include consolidating POSS' growing commercial user base.

■ **Helen McKenzie** has moved to CMG Information Services Southern to take up a new appointment as a business application consultant. She first joined CMG in 1978 when she worked at CMG Information Services City as a customer accounts supervisor.

■ **Raiyo Shroff** has been promoted to UK manager for Informatics (UK), the software products marketing arm of Informatics General Corp. Shroff joined Informatics in January from a computing career that has included 12 years in sales and executive education with IBM and 18 months running his own microcomputer company.

■ **Mike Beer** has been appointed managing director of OCC Computer Personnel (Southern). In the six years prior to joining OCC he held various senior management positions with Marcol Computer Services, latterly becoming overall director of operations.

■ Appointed senior product manager, IBM compatible equipment, at Walmore Electronics, **Mike Grubb** (above) will be responsible for expanding the sales of IBM compatible terminals, controllers and multiplexers utilising either fibre optic or coaxial cable. He joined Walmore in 1982 and his previous experience includes posts with Hewlett-Packard and at RAF Henlow.

■ **Micro Business Systems** has announced the appointment of **Mike Wadsworth** (above) as area sales executive for the West Country, covering Somerset, Dorset, Devon and Cornwall. Wadsworth, who is a graduate in business studies from Bristol Polytechnic, joins the company from Wilkes Computing, where he was a sales representative for the London area.

■ A number of recruits have joined Pinpoint Analysis, the new Waterloo-based computer services company. The team of **Upi Patel, Bernie Enlander** and **Kathy Brooks** is responsible for supporting SIR/DBMS, for which Pinpoint has been appointed UK marketing agent. **Geoff McHugh** has joined the company to head its financial modelling activities, while **Margaret Battams** will be responsible for its project planning systems. **Steve Howard** has joined the applications development team. All previously worked for SIA Computer Services.

■ MDS Computer Systems (UK) announces the appointment of **Garreth Evans** as director of sales. He joins from MDS Canada where he has been responsible for sales in the Eastern provinces for the last four years.

■ **Tandon International** has appointed **Chris Robinson** as UK sales manager. Until recently he was regional sales manager for Qume and prior to that lived in Belgium, where he was European disc drive specialist for Ampex.

■ **Keith Brook** has been appointed marketing support manager by Panorama Office Systems. He joins from Data Efficiency where he was sales development manager. Prior to that he was marketing services manager for Philips Business Systems.

■ **Adrian Preston** has joined Alpha-Abacus, the Alpha Micro based software house, as senior systems programmer. He joins from ASS where he was responsible for operating systems development.

■ **Zilog (UK)** has appointed **David Hussey** as Southern region sales manager. Prior to joining Zilog, he was with Crellon Microsystems 1981-83 as field applications engineer.

■ **Scan Laser** has appointed a new technical director, **John Escott**, following the successful launch of Syntext, a desk-top publishing system. Escott who has 15 years' experience in systems engineering and language support roles, will be responsible for initiating and controlling future software developments in the rapidly expanding field of electronic printing with merged graphics.

■ **Chris de Wet** (above) has joined Peachtree as project leader for the Peachtree business management systems. He has returned to the UK after nine years in South Africa. For the past two years he has been in Durban as software manager of Braum Business Machines, before which he was senior analyst/programmer at Shell South Africa.

DIARY

SEPTEMBER 22-23
Data Facility Products is a Xephon course at the Royal Kensington Hotel, London, costing £370. Details: Mary Haines, (0628) 74922.

SEPTEMBER 22-23 or 29-30
Two more seminar/workshops are being held on Interactive Video in Action. Run by Future Media, they cost £275 each. Details: Future Media, (0243) 867811.

SEPTEMBER 26
Introduction to d/BASE II is a course run by the Computer Training and Education Centre at its London centre. Other courses in September are Z80/8080 Assembler, Programming in d/BASE II, and CP/M80 Operator Level. Details: Richard Lee, 01-251 4010.

SEPTEMBER 26-30
Data Analysis Workshop by BIS Applied Systems takes place at Queens Hotel, Eastbourne. It is designed for members of data processing and user departments on projects with complex data relationships, and will train in new methods of analysis and design. Cost is £630. Details from Cherry Bigmore, 01-261 9237.

SEPTEMBER 26-28
Minis/micros with IBM mainframes is being held by Xephon at the Waldorf Hotel, London, price £490. Details: Mary Haines, (0628) 74922.

SEPTEMBER 26-28
Office Automation and Integrated Information Processing Support Systems is a Frost & Sullivan seminar to be held at the Cumberland Hotel, London. Fee is £425. Details: Carolyn Budd, 01-486 0334/5.

SEPTEMBER 26-28
Software Maintenance, a seminar held by Management & Training Services, takes place in London. Details: David Peters, (07842) 57373.

SEPTEMBER 26-30
The Pascal Workshop is run by the Control Data Institute, in London. Further information: Jackie Barclay, 01-637 2171.

SEPTEMBER 26-OCTOBER 14
Datasolve's ANS Cobol Programming Workshop takes place at the Education Centre, London. Cost is £760. Details: Joan Clarke, 01-499 7099.

SEPTEMBER 27-29
Data Communications and Networks is a seminar run by Control Data in London. Cost is £345. Details: Sylvia Lyons, 01-240 3400.

SEPTEMBER 29
Intel iAPX432 specialist, High Integrity Systems, is to hold a one-day seminar at the Excelsior Hotel, Heathrow. Further details from Carolynne Jones. Tel: 0279-725030.

CONFERENCES

■ Frost & Sullivan's seminar, Motivating and Managing Computer Personnel, will be held on October 20 and 21 at the Cumberland Hotel, London. Admission costs £385 plus VAT. The aim is to indicate what motivates DP personnel, then to demonstrate its application to each job in the computer department. The seminar covers how an organisation analyses its existing motivational environment, then determines which areas need improvement, and reducing turnover will be reviewed and discussed.

For further details contact Olivia Rossifer, publicity manager (01-486 8377).

■ The International Information Management Congress (IMC) conference and exposition, to be held in San Francisco from November 14-17, will feature topics for information managers. Under the theme The Challenge of Change — Information Management, IMC '83 will provide a variety of in-depth educational sessions on integrating technologies to form unified total information-handling systems. Special emphasis will be placed on document storage, retrieval, and distribution using computers, micrographics, electronic mail, word processors. Details: PO Box 34404, Bethesda, MD 20817, US.

■ The tenth Elkom Professional Electronics Fair will be held from November 1-4 at the Helsinki International Fair Centre. Over 170 direct exhibitors have already registered, including 15 from the Netherlands, England, Poland, Sweden, Denmark and Hungary. The Electronics Days series of educational sessions and seminars arranged in conjunction with the fair will take place from November 2-4. The event is being arranged by the Finnish Society of Electronics Engineers (FIS) and the Association of Suppliers of Electronic Instruments and Components. This is Finland's main exhibition of electronics equipment.

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TABLE 1: BREAKDOWN OF DATA PROCESSING EXPENDITURE IN THE UK BY CATEGORY 1982

	£M	Share of total
Hardware	2020	32%
Software and services	977	15%
Data processing supplies	304	5%
Telecommunication charges	120	2%
Data processing staff salaries	2641	41%
Internal overheads	301	5%
Total	6363	100%

TABLE 4: SOFTWARE AND SERVICES EXPENDITURE BY DATA PROCESSING DEPARTMENTS

	£M	Share of total
Package software	289	53%
Custom software/consultancy	118	21%
Processing services	105	19%
Training, etc.	40	7%
Total	552	100%

TABLE 5: WHERE VARIOUS SOFTWARE PRODUCTS AND SERVICES ARE ACQUIRED

Packaged Software	Hardware Vendor	Independent Vendor
System/utilities	80%	20%
Applications	37%	63%
Custom Software/Consultancy		
System/utilities	83%	17%
Applications	5%	95%

TABLE 6: DATA PROCESSING STAFFS' TIME SPENT ON DIFFERENT APPLICATION AREAS

	Share of total
Payroll/Personnel	11%
General Accounting	12%
Industry Specific	21%
Other Business/Commercial	24%
Other Technical/Scientific	7%
System/Utility Software	14%
Other	11%
Total	100%

TABLE 7: AVERAGE EXPENDITURE IN DIFFERENT SIZES OF DATA PROCESSING DEPARTMENT

Data Processing Department	Typical DP Expenditure
Large GPC Departments	£1m-£4m
Smaller GPC/Larger Minicomputer Departments	£200K-£500K
Smaller Mini/Small Business Machine Departments	£80K-£200K
Very Small Business Machines/Microcomputer Departments	Under £10K-£30K

TABLE 8: DISTRIBUTION OF EXPENDITURE IN DIFFERENT DP DEPARTMENTS

	% of Depts.	Typical No of DP Staff	% of Expenditure
Larger GPC Department	3%	40+	37%
Small GPC/Mini Department	17%	10-25	35%
Small Mini/Business Machine Department	26%	4-8	20%
Very Small Business Machine/Micro Department	54%	None	8%

TABLE 9: DP EXPENDITURE BY DIFFERENT INDUSTRY SECTORS

	Share of GNP	Share of DP Expenditure	Ratio
Retail/distribution	9%	11%	1.2
Finance/insurance	10%	14%	1.40
Transport/utilities	11%	6%	0.55
Services	14%	19%	1.36
Agriculture/mining/construction	15%	2%	0.13
Government	16%	22%	1.38
Manufacturing	25%	26%	1.04

TABLE 10: % OF ESTABLISHMENTS WITH A COMPUTER (EMPLOYING MORE THAN 20 PEOPLE)

	Penetrate Rate
Retails/distribution	20%
Finance/insurance	53%
Transport/utilities	24%
Services	35%
Agriculture/mining/contruction	12%
Government	40%
Manufacturing	37%
Average	31%

TABLE 11: TOP 10 DP VENDORS' REVENUES* IN THE UK 1982

	£M	Market Share
1. IBM	718	22%
2. ICL	412	13%
3. Burroughs	210	7%
4. DEC	173	5%
5. CDC	111	3%
6. HIS	101	3%
7. NCR	92	3%
8. Hewlett-Packard	78	2%
9. Sperry	77	2%
10. Wang	45	1%
Top 10 vendors	2017	61%
Next top 90 vendors	890	27%
Remaining 2900 vendors (approx.)	394	12%
Total	3301	100%

*Revenue generated within country, excludes export earnings.

Computer Weekly and the International Data Corp have combined to present a regular survey on trends within the UK data processing industry. This week we present the first of these surveys, which takes a global view of expenditure at some 38,000 computer sites in the UK.

In subsequent months the survey will look at individual industry sectors. The first of these, to be published in November, will focus on the engineering manufacturing industry, to be followed by other manufacturing, finance, insurance and banking, retail and wholesale distribution services, and government.

The objective of the surveys is to give users of computer equipment and services an indication of how they stack up against the remainder of the industry. The data for the survey comes from professional market research, with a high input of information from users interviewed at their sites.

The culmination of the market research will be used in a major conference scheduled for February 7 and 8, 1984 at the Royal Lancaster Hotel in London. The conference, sponsored by Computer Weekly and the National Computing Centre, in association with IDC, will contain essential planning information for information systems and services managers and general management who have responsibility for computer services (full details on page 2).

Mike Reidy, senior consultant at IDC, describes the findings in the first phase of the research.

UK spends 2.8% of national product on DP – a high European rate

THERE are about 38,000 computer sites in the United Kingdom and between them they spent some £6,363 million on data processing in 1982. That volume of money may seem to the reader a bit staggering at first, but put in context it is about 2.8% of the UK's gross national product.

Putting it another way, the typical company in the UK spends that percentage of its turnover on data processing – a benchmark by which readers may wish to measure their own company.

That 2.8% is high by European standards, which shows that data processing is one area in which the UK can hold its head high.

Table 1 shows what went to make up that £6,363 million. The biggest slice went on staff salaries.

The total bill for staff was £2,641 million, or 41% of total DP expenditure. IDC estimates that the total number of people employed in user data processing departments in the UK was some 300,000 in 1982 which gives them an average salary of £8,800.

This figure is, of course, a very general average over many occupations and levels of seniority within the data processing profession. It should not be seen as a norm for any one particular group of people.

The next biggest item on data processing expenditure was on computer equipment, or hardware. The total bill in this area for 1982 stood at £2,020 million, or 32% of total user expenditure.

It is interesting to take a closer look at the breakdown of the hardware figures. The details are shown in Tables 2 and 3. In terms of expenditure, by far the biggest item of expenditure was on large computers priced at over £300,000. They command 47% of the market in terms of expenditure. But in terms of the number of computers acquired by users – purchased, rented or leased – they represent about 1% of the market share.

At the other end of the scale, small computers under £8,000 in value, mainly microcomputers, formed 85% of all computers acquired but only 13% of actual money spent on computers.

These two sets of contrasting figures illustrate the substantial dichotomy in the hardware market today.

The UK spends more on microcomputers than any other European country. Of the 260,000 microcomputers acquired in Europe in 1982 some 31% were acquired in the UK.

Looking slightly ahead IDC sees these two extremes of the hardware market, very small systems and very large ones, as the two markets which will be growing fastest.

At the bottom end of the market there will be substantial growth, as more and more smaller companies and departments in larger organisations acquire their own microcomputers; and at the other end of the scale, centralised data processing departments will be acquiring larger machines, often to service end user departments in a communications environment. This will particularly be true as office automation is implemented in more and more companies in the 1980s.

There has been a lot of talk in the DP industry lately of the "software revolution". What with the fall in hardware prices and rising demand for computer packages, particularly user-friendly ones, for a whole host of business and technical applications, some people in the industry have been forecasting the time that software products and services will soon be the major component of data processing expenditure, and that hardware would be relatively inexpensive.

But from Table 1 it can be seen that this situation has not yet materialised. The level of user expenditure on software products and services in the UK in 1982 was £977 million. This figure, although substantial, falls far short of the £2,020 million spent on hardware.

These figures clearly would suggest that the futuristic scenario mentioned above is far from realisation. In fact on current trends in the UK, user expenditure on software products and services will not supersede expenditure on hardware until the year 2000!

This, of course, does not mean that software products and services do not form a crucial role in the future growth of the data processing industry. Quite the opposite. Hardware is often sold purely because it has also the appropriate software packages attached. This not only applies to microcomputers, but also to much larger systems – for instance, computers with a value of over £100,000 which offer CAD/CAM solutions to the engineering industry.

An examination of user expenditure on software products and services in itself is quite fascinating and highlights, in many ways, the complex nature of the DP industry.

One of the most striking features of user expenditure on external software products and services is that a high proportion of it, about 44%, is not under the control of centralised data processing departments. The reason for this is threefold:

1. Many smaller companies do not have an internal data processing department and rely on an outside processing service to carry out standard computer runs such as payroll, standard accounting and invoicing for them.

2. There are many specialised departments in larger organisations requiring special types of analysis, often of a mathematical nature, which use the services of an outside specialised service bureau or which have specialised systems developed for them by outside systems houses. These departments tend to pay for such services from their own budgets.

3. A third category of user, which is becoming increasingly important, is the end-user department that has acquired its own computer and has also purchased specialised software packages to run on it. This situation applies not only to the end user departments which have acquired microcomputers, but particularly to specialised departments such as design departments in engineering companies which may have acquired specialised CAD/CAM systems, again from their own budgets.

IDC estimates the expenditure on external software and services by these three types of users in the UK stood at almost £425 million in 1982.

The majority of expenditure on external software and services in the UK is still made by centralised data processing departments. Their expenditure in this area accounted for £552 million, or 56% of the total £977 million spent on software products and services.

It is interesting to look a little more closely where that £552 million was spent. The position is summarised in Table 4. Some £280 million of it was spent on packaged software as against a much smaller figure of £118 million spent on custom software and consultancy.

The trend is very much towards packaged software, as many users increasingly find these packages meeting their requirements quite adequately. As a result IDC expects expenditure on packaged software will almost be 10 times that spent on custom software and consultancy by 1990.

It is also revealing to look at what kind of software packages are [...]

dor. Table 5 summarises [...] tion.

In broad terms users [...] system utility software [...] vendor who provided the[...] in the first place. On the [...] hand they tend to go to [...] dent vendors for applica[...] ages. This is quite underst[...]

Hardware vendors [...] substantial system exp[...] have much less expe[...] writing industry specific [...] tions. On the other hand [...] independent vendors spe[...] developing specific type[...] cations. Often they [...] gained considerable exp[...] this area.

Related to expenditure [...] nal software and servic[...] ternal expenditure on dat[...] sing staff. That figure [...] stood at £2,641 million [...] three times the expendi[...] external software and servi[...]

There is somewhat of a [...] between the two areas. The [...] data processing department [...] on external software and [...] the less demand it has for [...] staff, and vice-versa.

Such a trade-off is prob[...] curring at present. While [...] ture on data processing [...] creasing, it is not rising [...] expenditure on external [...] and services.

Expenditure on data pro[...] staff is growing at about [...] annum while expenditure [...] aged software is growing [...] 30% per annum. This wo[...] gest that the demand fr[...] creasing number of comp[...] plications is being met [...] the use of internal staff [...]

As a result by 1990 we [...] that expenditure on DP [...] only be 1.5 times the exp[...] on software and services [...] being nearly three times [...] at present.

Results of the various [...] tion areas staff time is [...] are shown in Table 6. Al[...] of staff time is spent on [...] application areas, that [...] specific applications, [...] ness/commercial applica[...]

User data processing [...] ments spend more [...] ternally developing the[...] alone, than all the [...] they and end-user depar[...] together spend on exter[...] ware and services.

This would suggest that [...] are still may computer [...] areas that the software [...] industry is not adeq[...] addressing and which d[...] sing departments still pre[...] velop with their own in-[...] sources.

Data processing depart[...] yet, spend a very small pr[...] of their budgets on [...] cation charges for [...] lines or public data [...] 1982 they spent only 2% [...] age of their budgets [...] But the whole area of [...] tions is becoming in[...] portant as users more [...]

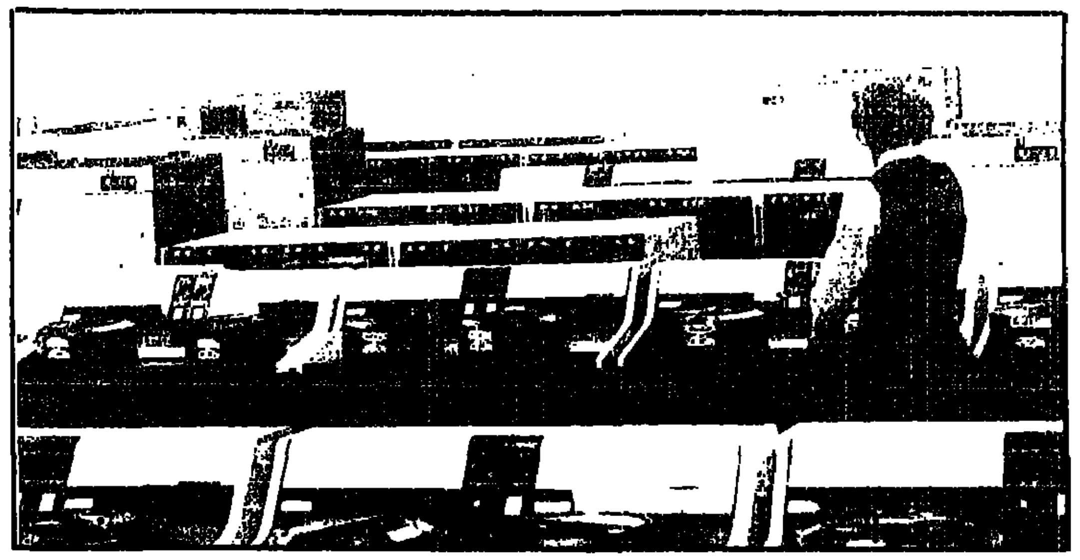
■ Continued on page 19

TABLE 2: UK COMPUTER EXPENDITURE 1982 Computer Classes Price Bands £'000	Units	Expenditure Market Share
Under 8	249	13%
8-25	131	6%
26-45	173	9%
46-85	126	6%
86-150	168	8%
151-300	218	11%
300+	955	47%
Total	2,020	100%

TABLE 3: NO. OF COMPUTERS* ACQUIRED IN UK 1982 Computer Classes Price Bands £'000	Units	Volume Market Share
Under 8	90,000	85%
8-25	7,200	7%
26-45	3,900	4%
46-85%	1,700	2%
86-150	1,200	1%
151-300	700	1%
300+	1,400	1%
Total	106,100	100%

*Only systems valued over £500 are included.

Top 10 vendors earn 60% of all DP revenues



■ From page 18

more into a distributed data processing environment and as office automation starts to take off. As a result by 1990 we expect users to be spending nearer 6% of their budgets in this area than the current 2%.

One encouraging feature in the UK is the relatively advanced stage of data communications compared to other European countries. Users in the UK spend, on average, twice as much of their budgets in this area as data processing departments in other European countries and IDC expects this pre-eminent position to be maintained for the foreseeable future.

The last remaining item of data processing expenditure by DP departments is on data processing supplies. This includes expenditure on such items as tape reels, disc packs, floppy discs as well as computer forms, cards, ribbon etc. Something like 5% of DP budgets for 1982 was spent in this area.

IDC does not see any dramatic changes in that percentage over the next few years – one area, floppy discs, being the exception, where there will be quite a high growth to correspond to the high growth in the microcomputer area as a whole.

There is a quotation from George Orwell's Animal Farm which says "All men are equal but some are more equal than others." The same applies to data processing departments and their levels of DP expenditure.

In the case of expenditure, every data processing department is definitely not equal. Just as hardware expenditure is very skewed towards the high end of the market, so is data processing expenditure skewed towards data processing departments with those larger machines installed.

IDC has divided data processing departments into four different categories for this survey.

Category 1 comprises data processing departments where there is at least a large general purpose computer installed, ie a computer equal to or larger than an IBM 4341 Model 2. There are also probably four or more other computers installed within the department. The department also most likely employs more than 40 data processing staff. Such a department would have a total data pocessing budget of the order of £1m-£4m. These data processing departments comprise only 3% of all data processing departments in the country. Between them, however, they spend almost 37% of the country's total data processing expenditure (See Tables 7 and 8).

Category 2 comprises data processing departments where there is a smaller general purpose computer installed such as an IBM 4331 or a larger minicomputer such as a DEC Vax. The department would probably also have one or two smaller computers installed. They would also probably have a DP staff of 10 to 25. Such a department would have a data processing budget of between £200K-£500K. These departments make up 17% of all DP departments in the country and between them they spend approximately 35% of the country's total DP expenditure.

If we add Categories 1 and 2 together we arrive at the figure of 20% of DP departments spending 72% of all data processing expenditure, which is quite close to the classical 80/20 rule for spending distribution among consumers – 80% of expenditure made by 20% of buyers.

Category 3 comprises data processing departments which have a small minicomputer, eg a PDP 11/44 or a business machine such as a Wang VS installed. They may also have one other smaller machine as well. They typically employ a DP staff of four to eight and their annual DP expenditure is between £80K-£20K. There are about 10,000 such DP departments in the UK, and they are the nearest group to the "average" data processing departments in the country, if such a term is meaningful in such a diverse market. They form 26% of all data processing departments and spend 20% of the UK's total DP budget.

Category 4 is by far the largest group of computer sites, comprising over 50% of all sites in the country. These are those which have only a very small business machine such as a Systime 500 or a microcomputer installed. In many cases they do not have a professional full-time data processing department, the normal office staff operating the computer if and when required. Their data processing budget, including a proportion of staff costs, would most likely range from under £10K to £30K. Between them they only spend some 8% of the total UK's DP budgets.

Yet another way of looking at data processing expenditure is from an industry point of view. This highlights certain interesting differences between different industry sectors. Table 9 ranks seven different industry sectors according to their relative size in the UK economy, ie their % contribution to the gross national product.

It is clear from the table that certain industry sectors spend a greater proportion of their resources on data processing than others. The finance and insurance sector, for instance, spends the most on data processing in relation to its total resources while the agriculture/mining and construction sector spends least.

Table 10 shows the percentage of establishments, employing more than 20 people, that have a computer in each industry sector. Again the finance and insurance sector comes out on top.

The average penetration rate across industry sector is 31%.

Let's turn now to the vendors in the UK who actually provide the data processing and end-user departments with the necessary DP products and services. There are about 3,000 such vendors in the UK.

Excluding telecommunications charges to British Telecom these 3,000 companies between them earned the £3,031 million spent by users on hardware, software and services and data processing supplies combined.

It is interesting to note, however, that the top 10 data processing vendors alone earned between them a staggering 61% of that money. The number 1 vendor, IBM, by itself earned 22% of the revenues, a substantial market position by any standards. The other top nine vendors earned between them another 39% of total data processing revenues.

IDC estimates that the next 90 top vendors, both hardware vendors and software and services vendors, earned another 27% of the DP expenditure between them. That leaves £394 million or 12% of the revenue for the remaining 2,900 or so vendors in the DP industry – a relatively small market share.

However, it gives them a not insubstantial average turnover per annum of £136,000. See Table 11 for a summary of vendors' market share.

One can perhaps now summarise the current pattern of data processing expenditure in the UK in the following way.

- Expenditure on data processing staff is still the predominant item of expenditure by DP departments.
- Hardware is still much larger an expenditure item than software and services and is expected to remain so for some time to come.
- Expenditure on hardware is still skewed very much towards larger computers with expenditure on microcomputer forming as yet, only a small proportion of the market.
- However, the UK is well advanced in the use of microcomputers compared to the rest of Europe.
- The UK is also well advanced in data communications compared with the rest of Europe.
- Almost half of the expenditure on external software and services is not under the control of centralised data processing departments but spent by end-user departments and companies without a computer of their own.
- Data processing expenditure is highly skewed towards larger sites with the top 3% of DP departments spending 37% of the UK's total DP budget.
- Finally the top DP vendors have a very dominant position in the marketplace. The top 10 vendors earn between them over 60% of all data processing revenues while at the bottom end some 2,900 vendors earn only 12%.

IDC Europa, 2 Bath Road, London W4 1LN. Tel: 01-995 9222.

AUTUMN SOFTWARE FORUM – AGENDA

DAY 1
Technology Update

Morning
★ Overview/Introduction
★ Advances in 16-bit Operating Systems

CP/M Plus
★ Concurrent CP/M Technology
– Structure and Mechanisms
– Windowing
– Networking
★ Advances in the User Interface
– VIP (Visual Interface Processor)
★ Demonstrations

Afternoon
★ Graphics Update
★ 'C' Software Design Methodology
★ Languages Update
– CBASIC Version 2.0
– Pascal MT Plus
– Converter Technology
★ UK Software Development Support
– NCC

DAY 2
Tutorials

Morning
Workshop 1
Designing for the Concurrent Environment
★ How to Write Software to Run in Concurrent Environment
– Process Management
– Window Management
– O/S Portability Issues

Workshop 2
Languages and Graphics
★ Using Graphics Extensions
★ CBASIC Graphics
★ 'C' Programming Language

Afternoon
Workshop 3
Consumer Software
★ The Logo Language
★ Personal BASIC
★ Personal CP/M
★ VIP

Workshop 4
Productivity Tools
★ Display Manager
★ Access Manager
★ Examples

the Creators of CP/M

Digital Research Autumn Software Forum

October 17 and October 18, 1983 Cafe Royal, London

As a follow-up to our outstandingly successful ISV Forum in April, Digital Research, the world's leader in microcomputer system software, is holding a major software forum on 17th and 18th October 1983 in London. We feel it is vital for software suppliers and equipment manufacturers to get up-to-date training in the rapidly changing personal computer software industry as new and enhanced products are introduced. We have structured our two-day programme in line with your suggestions – offering a one-day seminar giving a broad update on key system software developments, followed by a second day of 'mini-workshops' at which we can provide design level training. You will be able to go to either or both days to match your own interests.

We plan to focus our discussions on three key areas:
★ Developments in software technology – particularly in the area of operating systems where concurrency, windowing techniques and networking can be exploited.
★ Strategies for portability in languages, graphics and user interface.
★ Methodology in programmed productivity both in tools and techniques.

We feel this forum will be of great value both to Independent Software Vendors and Personal Computer equipment manufacturers.

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This day will provide a full overview of developments in personal computer systems software from Digital Research. This session is a must for those wanting to keep abreast of trends and developments in this area.

Day 2 – Product Tutorials
We will hold four tutorials on the second day of our forum. An attendee can choose to go to two of these sessions. The tutorials will consist of an in-depth technical session describing product use and facility. These sessions will be of great value to designers or programmers.

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Date ______ (Tax Point) The additional tickets are for
Name ______ Name ______
Company ______ Company ______
Position ______ Position ______
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As well as being the world's largest computer manufacturer, IBM is the largest mainframe maker, the largest software supplier, the largest small-to-medium systems supplier, the largest peripherals manufacturer and the largest chip manufacturer.

IBM is big. It is the largest commercial phenomenon of the second half of the 20th century and, in profit terms, is the second largest company in the world.

***Computer Weekly* reports on aspects of IBM in this special feature. Here, Kevan Pearson examines IBM's market position and previews the forthcoming battle of the giants – IBM and AT&T.**

IBM—not simply a computer manufacturer, a way of life

WHAT is IBM? The answer is not as simple as the question. IBM is not just the world's largest computer manufacturer. It is the largest mainframe maker; the largest software supplier; the largest small to medium systems supplier; the largest peripherals manufacturer and the largest chip manufacturer. And, by the end of 1983, it will be the largest microcomputer supplier.

In 1982 it was, in sales terms, the eighth largest company in the world; the second biggest in profit terms and the largest in terms of return on sales.

In the computer market in 1982, it was eight and a half times bigger than its nearest rival – Digital Equipment. In fact, IBM grows by one DEC a year. Sales in 1982 were $34.4 billion and are expected to reach $40 billion in 1983.

IBM is the commercial phenomenon of the second half of the 20th century. It did not make its first computer until 1952, a year or so after one or two of its early rivals. But, since then, it has all but dominated the information technology industry.

In 1983 it probably has a higher share of the mainframe computer market than ever before and, although this share is difficult to estimate, because IBM does not release market share information or even quote the number of systems it has sold, the figure is thought to be between 70 and 80%.

The total market is very different from the market when the 370 series was launched in 1970. Few then would have predicted the rise of the minicomputer, or the prominence since achieved by DEC, Hewlett-Packard and others. And virtually no one anticipated the micro let alone its sale in millions. As the market grew beyond the confines of the conventional mainframe, IBM missed the boat.

The company all but ignored the rise of the minicomputer, much to its cost, and even today it has only a very small presence in that market. And it took five years to respond to micro giants Apple, Commodore and Tandy, though its response to the micro invasion was more successful than its attempt to stem the mini tide.

IBM is active in almost every area of the computer industry, and, where it doesn't have a product or service itself, it is prepared to buy one in.

As a result, IBM now controls only about 40% of the information technology market, and almost every move it makes is directed towards consolidating and where possible strengthening, its grip.

One such move was the announcement on February 8, 1983 that the provision of source code on certain software products would be restricted. Other computer manufacturers, such as DEC, Sperry and ICL, have had a similar policy for years, but IBM has not had such a policy before and there are very healthy third party software and hardware industries effectively riding on its back. These industries are beginning to feel increasingly vulnerable, given IBM's more aggressive stance.

Freed from the immediate threat of anti-trust legislation, IBM is now on a healthy product life cycle in several areas and, having realised that its grip on the market has slipped, it is taking action to strengthen that grip. It is active in almost every area of the computer industry, and, where it doesn't have a product or service itself, it is prepared to buy one in, or enter a joint venture with a successful supplier (eg Rolm in the telecommunications market).

It would have been unheard of two years ago to see IBM invest in another company. It has now done so twice, and probably will again.

These link-ups are no more than another string to IBM's fiddle, for, although the company might shy away from the word domination, there are few doubts outside IBM (and probably even fewer inside it) that domination is what IBM is bidding for.

Control is the essence of IBM's policy and it is pursuing control through various means: its efforts on standards committees the world over; the promulgation of its own standard: and its links with other companies that enforce the *de facto* standards of the IBM world. System Network Architecture (SNA) is a notable example, supported by almost every important firm in the data processing world, from DEC, Sperry, Wang and ICL to the makers of the humble micros that can perform as SNA terminals.

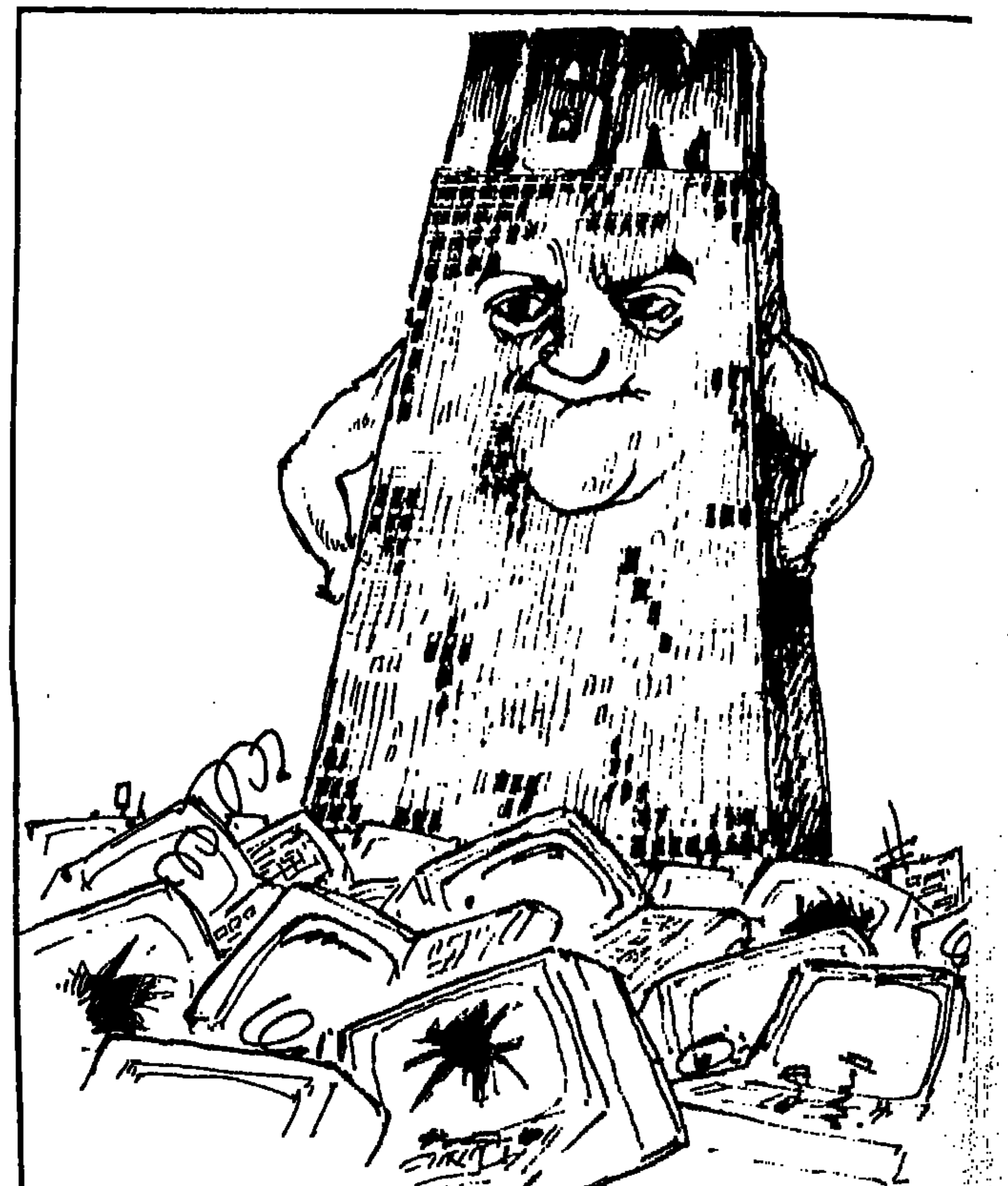
Control of the still highly profitable information technology industry will enable IBM to meet its major objective: the maximisation of its shareholders' earnings power and wealth. Within the last 12 months the value of IBM's shares has doubled, from just under $60 a share to over $120.

It is clear, then, that IBM is a different company from what it was two years ago. Then, it had only just launched its Personal Computer in the US; it was still split into two major business divisions – Data Processing for mainframes and General Business for small and medium systems and office products – and it was still defending itself in the largest, most comprehensive anti-trust (monopoly) case.

Within six months or so, from summer 1981 to January 1982, there was a complete change in direction on major and minor issues.

The dropping of the anti-trust case must be a major factor behind IBM's new found aggressiveness (another word the company does not like), though John F. Opel, the present chief executive, denies it.

In the eyes of IBM's major competitors – the plug compatible hardware suppliers and the compatible software companies – IBM has certainly become a lot more active in the market in several areas it had not been active in before. Price cutting is one of the major changes. IBM is now far more willing to do deals than ever before, which has been welcomed by users but is a major source of irritation to competitors.



OPEL . . . Salary reputed to be $1.3 million.

IBM is also much more ready to respond to new opportunities. Since the late 1970s it has been pursuing a policy of pushing users towards the outright purchase of equipment rather than renting. This is a complete reversal of company policy. When IBM first started producing computers you couldn't buy one, you could only rent one. Today, some (8100s for example) are for purchase only.

This has freed IBM from the financial constraints of financing its rental business, and has lifted a considerable burden from IBM's corporate shoulders. In the mid-1970s well over half of IBM built computers were owned by IBM and rented out to users. One recent study in the US claims that over 80% of 308x mainframes are sold outright, which is a major cash boost as 308x hardware costs from £800,000 to £2.5 million.

This enables IBM to launch new models without worrying about the effects on assets tied up in rentals, and this should result in shorter product life cycles. The 360 lasted six years; the 370 seven years; the 303x four years. The 308x range, announced late in 1980, is expected to have an even shorter life, though many would say that the 3081D announced in November 1980 was not a true 308x machine and that the first real 308x was the 3081K announced a year later.

Either way, the replacement Sierra/Trout series is expected to be announced in 1984. An effective three or four year life cycle spells problems for IBM's competitors and its users, as the machines they are spending anything from £1 million upwards on today will be out of date in under two years if the industry expectation about the Sierra's launch date is accurate.

Within the last 12 months the value of IBM's shares has doubled, from just under $60 a share to $120

Behind these changes in the way IBM now operates lies a change in the hand on the corporate tiller. As of January 1, 1981 John Opel succeeded Frank Cary as IBM's chief executive.

Cary guided ... difficult years of the 13 year ... trust case and the decade ... range in the computer ... the 1970s. Cary was the ... IBM during this period ... policies are behind many ... changes now taking place.

Opel is a product of IBM ... so than even its compu... joined the company ... straight out of univers... years later he was ... Thomas Watson Jr, the ... IBM's founder. And a ... that he was the company ... dent.

Opel inherited a comp... radically different from the ... joined in 1949. And he ... one of the most difficult ... industry – and the highest ... (Opel's 1983 salary, accord... *Time* magazine is $1.3 million) ... does not have to change ... direction to maintain profit... But he has to ensure that ... on the market does not ... further, and where possible ... that its grip tightens ... when a company has sales of ... billion in a single market ... tential for trouble is ...

In recent years there have ... two occasions when mistakes ... made, not counting the ... portunity in the ... market. First, IBM, with ... conservatism, totally ...

■ Continued on page 21

IBM – not just a simple computer maker

■ Continued from page 20

mated the demand for the 43xx series announced in 1979. Industry analysts put first-day orders at 50,000. Underestimating the demand, and underpricing the product are two of the most widely cited reasons for IBM's very flat profit growth between 1979 and 1982. In that period, for the first time in the company's history, its profits actually dropped in real terms.

Second, the 3380 disc drive was launched and withdrawn due to technical and production problems and finally came to the market a year late. The problems alone cost IBM dearly. The lost business to competitors, such as Memorex and Storage Technology cost just as much, if loss of face is included.

IBM, with typical conservatism, totally underestimated the demand for the 4300 series announced in 1979

In product terms IBM became the company it is today with the mementous launch, in 1964, of the 360 series (or System 360, to give it its IBM nomenclature). This was the first fully upwards compatible series of computers spanning all the available power ratings. Prior to this IBM had sold two ranges of computers; the 1400 series for medium range data processing and the 7000 series, to top of the line computing. The 7000 series was the first range of IBM machines to use solid state technology. It was launched in 1960.

The 360 series spanned a range from the lowly model 20 to the supercomputer models 67 and 95. The 90s models in the 360 series were the subject of one of the few successful private anti-rust cases to be brought against the company.

Control Data, then as now, a major supplier of scientific supercomputers, alleged that IBM announced one of the 360/90 machines purely as a ploy to hurt CDC and that IBM had no intention of ever supplying the machine.

IBM denied the allegations. The court found in CDC's favour, and awarded triple damages. IBM did actually deliver its alleged paper or knock-out 360 system, albeit at very great cost and after much delay, and in very small numbers.

The practice of announcing a product never to be delivered but merely to knock out the competition originated, or was refined to a fine art, in National Cash Register, before the first war. Tom Watson, IBM's founder, was a senior man at NCR, prior to the government anti-trust case in which Watson and the rest of the NCR board were named.

Mud sticks and IBM was, on many occasions, accused of using similar knock-out, anti-competitive practices.

The anti-trust case, dropped in 1982, was not the only case the government made against IBM. An earlier, much less comprehensive, case ended in 1956 with IBM entering into a consent decree with the government, defining its behaviour on certain points of business practice. This consent decree, according to William Rogers in his book *Think*, became the basis of IBM's business bible – the book of rules governing how salesmen should act in sales situations, lest IBM be once again called to account for its dominance in the computer market.

The 360 series set the trend which IBM follows even today with its mainframe range. As Gene Amdahl, the chief architect of the 360 who went off to found Amdahl Corporation, says: "IBM is the largest plug compatible supplier in the business." It can no more afford to move away from the development direction established with the 360 than it can afford to continue to give software away (with the 360 you bought the computer and the software was free, bundled in with the cpu).

There is only one indication that IBM ever tried, or thought about, moving off from this set course. That was with the so called Future System, which was quietly, and unceremoniously dropped in the mid-1970s. It seems that the taste of FS was so bitter that all trace of it has been expunged from IBM's public records.

FS was meant to take IBM away from the 370 series, which in 1970 had replaced the 360, and move it into a new direction, one which the competition, in the shape of the Bunch (*B*urroughs, *U*nivac, *N*CR, *C*ontrol Data and *H*oneywell) and the nascent Amdahl Corporation could not follow. The problem was IBM couldn't follow it either. But not all the FS research was wasted. It is said to be the basis of System 38, and to have links with MVS/Extended Architecture, IBM's flagship operating regime.

So, apart from one expensive and unsuccessful dalliance outside the confines of the System/360/370/XA fold, IBM is as trapped in the compatibility problem as are the plug compatible suppliers. It has moved away in some areas, such as the extensions in Extended Architecture, but there is only one way compatibility between the older systems and the new ones (software written for MVS/SP 1 will run under MVS/XA, but XA software, designed for 31 bit addressing will not run under SP 1).

These changes are widely viewed as serving two ends: they remove user restrictions and they make it difficult for the plug compatible manufacturers to follow.

The first point is valid; the second, more dubious. Amdahl claims that it was able to predict over 90% of what XA would do before he saw a copy. Other pcms say the same. Of course they have a vested interest in saying this. But the facts bear out their suppositions, at least for most of the way.

With the massive investment in 370 software and expertise IBM can only move so far at each step. And the steps it can take are constrained within fairly well defined parameters. What it is probably planning to do now is increase the rate of taking steps rather than the scale of change in each step.

This increases the strength of IBM's greatest weapon, first highlighted by Gene Amdahl, after he had left to found Amdahl. The weapon is FUD – fear, uncertainty and doubt. Can the competition match IBM's technology? Can the pcms maintain compatibility?

These questions are FUD questions. IBM does not ask them directly but the pcms claim there is a hit squad from IBM priming potential defectors from the IBM fold.

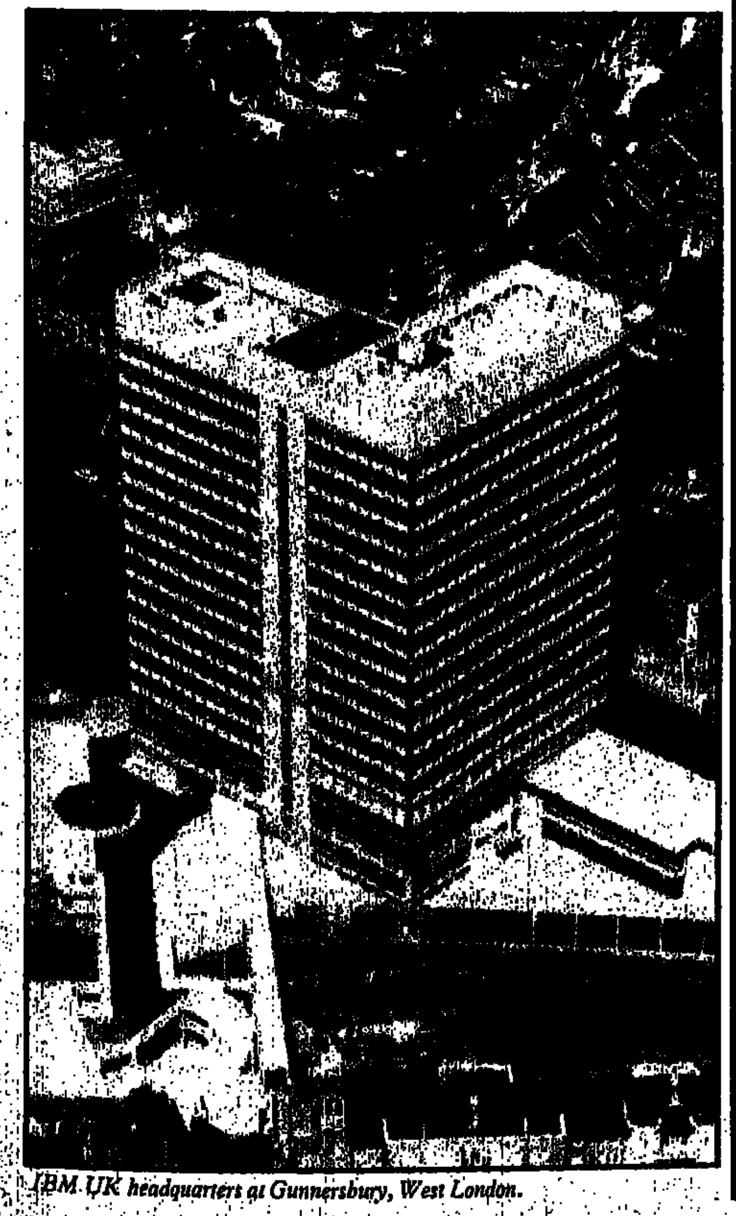
IBM could, if it so chose, put the entire pcm hardware and third party software industries out of business within a year. It won't for several reasons. First, both industries serve needs that IBM is unprepared to meet – difficult installations with very specialised needs or specialised pieces of software with a strictly limited appeal. Second, it would be politically and legally unacceptable.

What IBM wants to do, quite simply, is control the rate at which these industries can grow, and to dictate the pastures in which they can grow.

Why should IBM want this level of control over the rest of the industry? The answer is simple: IBM does not want a fire in its own backyard when, in the not too distant future, it will be locked into the biggest marketing and technology battle that any business, in any country has ever seen.

The enemy will be American Telephone and Telegraph, but they won't be battling for the computer industry. The deregulated AT&T will leave that to IBM, just as IBM will leave the bulk of the international carrier business to AT&T. Where they will fight – tooth, claw and FUD – is in the grey and still undefined area between straight commercial data processing and conventional telecomms.

Kevan Pearson is editor of *The IBM System User*.



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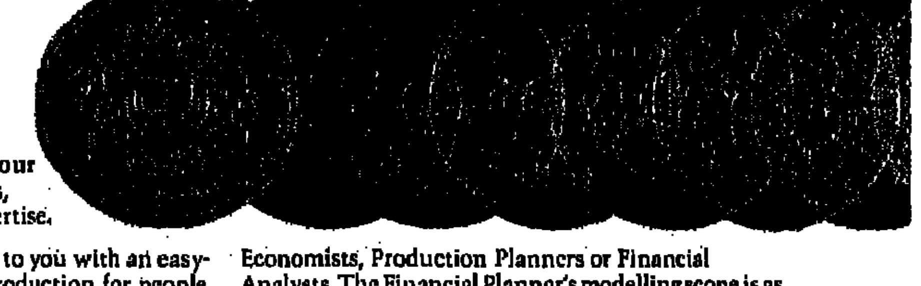

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COMPANY PROFILE

There's a saying that "no DP manager ever got fired for buying IBM." But although IBM users find it cosy to be locked in to IBM hardware, it's difficult and expensive to move away.

John Riley writes about hardware, which encompasses typewriters, giant mainframes, microcomputers, word processors, robots — and even space satellites

The cosy world of the IBM user

IBM, with its annual turnover in the region of £23 billion, is an all embracing giant which permeates the whole of the information industry, from electronic typewriters to a 20 mips mainframe and from robotics to space satellites.

Its research and development budget is staggering. In 1982 it was $2,053 million — as much as the five-year European Esprit and the five-year Alvey programmes put together. That reservoir, together with the confidence inspired by the name — a saying the company does not discourage is "no DP manager ever got fired for buying IBM" — has enabled the company to drag its feet in some areas and prod users in others, to its advantage.

The range of computer systems, from micros to mainframes, comprises a number of product groups. On entering one of these groups, users find it cosy while locked in to it, but when it comes to moving into another group they find they cannot always carry over applications, which creates a problem expensive to solve.

Since its launch six years ago the highly successful but ageing System 34 has proved itself the most successful small business system ever, with an estimated 60,000-90,000 sold worldwide, and an estimated 3,000 installed in the UK.

Although popular, System 34 has reached the end of its life. Many users were outgrowing it, with no clear growth path. IBM tried pushing the System 38 as the successor, but encountered user resistance. This was not surprising, as the jump between the 34 and 38 is bigger than appears at first sight — a large system conversion from the 34 to the 38 could take up to a year to complete.

The recent launch of System 36, which had been awaited for two or three years, and which has only become available in the UK this month, provides an effective growth path, and goes a long way towards undermining competition from rival companies homing in on System 34 users with RPG compilers on their own machines. Wang had the most effective challenge, though it experienced screen handling problems with RPG.

System 36 incorporates many of the advantages of System 34, and can be plugged in with only a 13 amp plug.

System 38 was announced with much drum beating, but before it had been properly developed. Consequently most users were, according to another recent Xephon survey, unhappy with slow response and inadequate back-up facilities.

However, the launch of System 38 Models 7 and 8 recently have doubled the performance, from an estimated 0.24 mips for the Model 5 to 0.52 for Models 7 and 8. The maximum memory size for the Model 7 is twice that of the Model 5 at 4 Mbytes, with that of the Model 8 being 8 Mbytes.

System 38 is often regarded by programmers as a "pig" to start with, but well liked once they get used to it. They like the program development aids and database software and improved communications that were announced earlier this year.

Turning to the mainframes, in the last four years there has been a total revolution. IBM watcher Jack Hart of the International Data Corporation, points out that, in December 1979, 63% of the installed IBM mainframes in the US were 370 series, and 25% the earlier 360 series. The larger 3030 series comprised 10% while the then newly launched 4300 series was only 3%.

Projecting to the end of this year, Hart sees the total US user base for the 360 and 370 machines shrinking to 17%; the 3030 series remaining about constant at 8%; with the new top of the range 3080 series at 9% and the 4300 series top at 66%.

The 4300 series is essentially the old System 370 in design terms, supporting DOS, the architecture of which was laid down in the old batch oriented days of the 1960s.

The highly successful but ageing System 34 has proved itself to be the most successful small business system ever

There are two broad groups within the 4300 range. The first is the 4321 and 4331 series, which range in performance from 0.2-0.4 mips, million instructions per second, and support DOS operating systems. The second group is the 4341 series which ranges from 0.4 to 1.3 mips, and supports DOS and MVS operating systems.

Last October the 4341 was expanded upwards (the 1.6 mips 4341/12) and downwards (the new entry level 4341/9 at 0.4 mips). Jack Hart considered those announcements put "the last nail in the coffin for the 4331" and he predicts a new strategy developing in that lower end of the market.

There is a significant gap between the 4341 groups and the next group, the 3080 series, which ranges from 3.7 mips (the 3083E) to the 23 mips 3084. The plug compatible manufacturers have homed in on this. National Advanced Systems has its 2.4 mips AS/6650 and Amdahl its 2.7 mips 470V/7C.

The 3080 series, the first machine of which, the 3081/D, was announced late in 1980, has effectively rendered the old faithful 3033 mainframe series, launched in 1977, redundant. However, the 3033 refuses to lie down and die and there is a healthy secondhand market for it.

The 3083 series, confusingly named, as it is less powerful than the 3081 series, was launched in spring last year. Tom Frana, vice-president systems support of National Advanced Systems, sees another gap between the 3083/J (7.9 mips) and 3081 Model G (11.4 mips) and believes that his firm's 9000 series provides the "broader range that the user market place with a 20-25% growth rate requires".

The top end 3084 (27 mips) is still faster than any plug compatibles high-end offering, and Hart believes that IBM will fight to "remain a leader at the high end, wanting to offer the biggest, the best and the fastest", especially in view of the impending Trilogy machine, which is expected to be in the 50 mips range.

The 3080 series — the 3083, 3081 and 3084 — are field upgradable, with ease. A significant release has been a new operating system for this series, MVS/XA (extended architecture), which allows direct addressing of over 16 Mbytes of main memory.

In the small business area, there are two systems the user can use if he wants a strongly centralised host control or broad communications capability. These are the Series 1 minicomputer and the 8100 distributed data processing system. By contrast the System 34/36/38 would be used for decentralised control.

Both the Series 1 and the 8100 had been slowly sliding from view until they were brought back and revitalised this year. The Series 1 was launched seven years ago as a future-proof system, and earlier this summer was saved from the scrapheap by the introduction of full SNA capability and more powerful hardware.

IBM affirmed its commitment to the 8100 series this summer with two new middle range models — the 8130 and 8140, with main memory ranges from 412 Kbytes to 2 Mbytes, and 8 Mbytes logical address space. Also this year a new version of one of its operating systems, DPPX (distributed processing programming executive) was released. This allows full participation in SNA.

Further proof that the 8100 is not dead is provided by the APL language compiler which runs under DPPX.

IBM's System 23 Datamaster is aimed at the very small business market; a typical entry level configuration costs about £6,000.

The system runs Basic and the applications generator Brads (business report application development system), which is useful, if slow, for the novice businessman. There is compatibility for Basic with the System 34. However, there are doubts on the System 23's future as it does not support SNA, and also has an 8-bit Intel 8085 chip with no clear growth path.

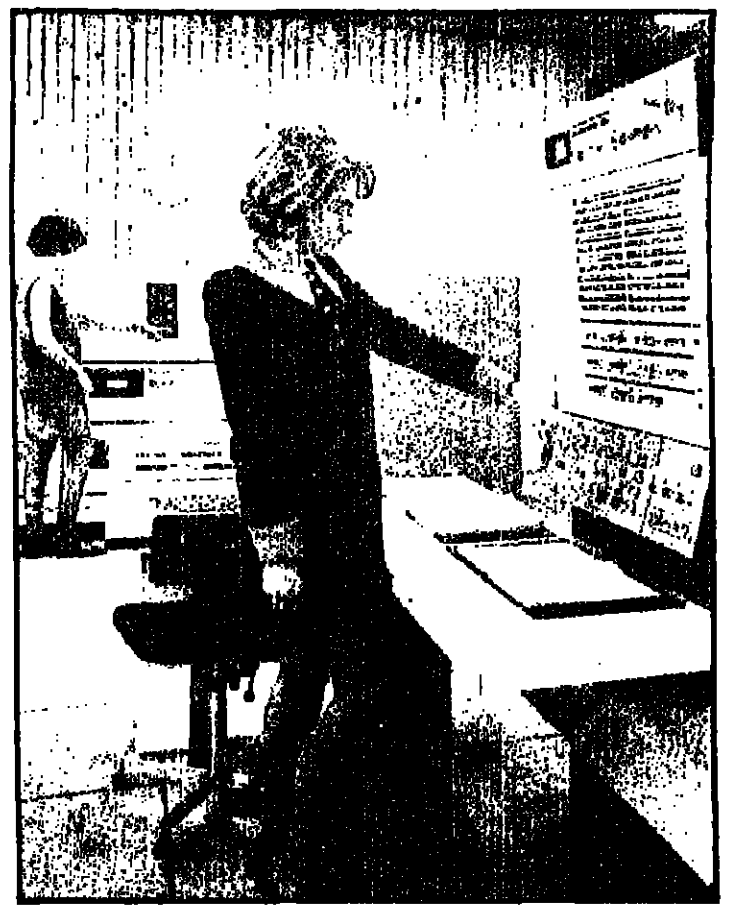
In the very lowest area, IBM has three popular products: the 5520 administrative system; the 6580 Displaywriter and the Personal Computer.

The 5520 is an office automation system for word and data processing and electronic mail. The Displaywriter, which was announced in mid-1980, is primarily a word processing product, driven by an Intel 16-bit 8086 chip with up to 256 Kbytes RAM storage. It has the facility to exchange data with System 34/36.

The Personal Computer launched in the UK this January, has sold exceptionally well in the US, where there is now a shortage.

The Personal Computer is based around an Intel 8088 pseudo 16 bit chip, allowing plenty of room for future upgrading, and offers from 16 to 544 Kbytes of main memory. It can be connected with Systems 34/36/38 and process data held on those machines and then return it to them.

Several other interesting departures are likely this autumn, perhaps the most widely forecast being the Peanut $1,000 micro, which when released could well help to accelerate the shakeout in the micro market.



The 1960s saw the introduction of the miniskirt and IBM's 360 mainframes.

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COMPANY PROFILE

What are the prospects for IBM's systems software – especially its VSE system? Jonathan Clarke, a senior consultant with Reed Stead Morrell, analyses IBM systems software and conjectures what the giant will get up to next in an extract from a forthcoming Xephon seminar on strategies for VM/VSE.

What will IBM do with its software?

UNTIL recently, being part of the IBM user fraternity meant having hardware which carried the IBM label, an IBM operating system, and additional IBM-produced software components such as TP monitors and database systems. Such has been the rapid growth of plug-compatible hardware and software suppliers that the only common feature among IBM users today is likely to be that the operating system alone comes from IBM. Exceptions, such as EDOS, do not comprise a significant share of the market.

IBM has two main families of operating systems for general purpose production environments – the DOS or VSE family and the OS or MVS family.

In the beginning (the mid-1960s) there was System 360. Its operating system was called OS, but would run only on a computer with a large amount of main memory. 32K was large in those days. It was also expensive, so smaller operating systems were developed to support the smallest processors of the System 360 series. These did not have the same facilities as OS, but frills and functions had to be disregarded to make the operating systems run on small machines. The survivor of these early small operating systems was DOS.

The growth strategy in the early days was simple for the expanding DOS user. When the DOS system could not provide sufficient facilities, or a larger machine was needed, the user would convert to OS. As time went on, this became more and more expensive, as an increasingly larger investment in DOS-based applications would be wasted.

At the top end of the operating systems new facilities were added, and OS was split into MFT and the larger MVT.

The arrival of the System 370 range of processors heralded virtual storage versions of the operating systems. Hence DOS became DOS/VS; MFT became OS/VS1; and MVT became OS/VS2, which was provided in two forms called SVS (later dropped) and MVS.

New users of IBM mainframes would take either DOS/VS or the slightly larger OS/VS1. As they grew in computing requirements, a conversion to MVS would be suggested. This was much simpler for the OS/VS1 users than for the DOS/VS users, but there were still major organisational problems in testing and developing the new operating system.

Enter VM. This was offered by IBM as an operating environment that could act as host to one or more other operating systems. Hence old DOS-based applications and new OS-based applications could co-exist on the same machine. When DOS applications had been converted to OS, VM could be dropped. During the 1970s, VM was definitely the Cinderella of IBM operating systems. Although it allowed greater flexibility, it imposed a substantial overhead, as at least two operating systems had to be resident in the same machine.

VM's fortunes changed with the introduction of the 4300 series. DOS/VS received the most obvious facelift, when DOS/VSE was announced with a timesharing online editing system and other interactive products. But the 4300 processors included a lot of microcode, and much of this reduced the overhead of VM. Microcode assists were provided for VM, VS1, and eventually MVS.

The effect on VM was to make it the fastest growing operating system round about 1980. Instead of being ditched when a conversion to MVS was completed, VM was frequently kept on, chiefly for its flexibility and its CMS component. Moreover, the combination of VM and VSE (ie DOS/VSE) often meant that bottlenecks which had produced the conversion requirement were removed – at least for a time.

Meanwhile, the OS-based operating systems were far from being ignored. As these were the operating systems used by the biggest and most technically demanding customers, the largest version (OS, then MVT, then MVS) had

VSE has survived various attempts to kill if off largely because of the large user base, and the fact that VM does not support CICS directly

to have all the bells and whistles available. Teams of technical support staff were (and still are) needed at each site just to keep the operating system in check. The increased demands for more processing power and software capability led to the emergence of the 308X range of processors and the extended architecture. For MVS, this has meant MVS/XA, with its larger virtual storage addressing capability (31 bits instead of 24 bits).

The evolution from OS to MVS/XA has been the result of considerable IBM development and re-development including complete rewrites. En route, the smaller versions of OS have disappeared (like SVS), or are about to disappear (like OS/VS1). Even MVS/SP must have its days numbered, though few users will worry about that over the next two or three years. In any case, a conversion from MVS/SP to MVS/XA will not cause severe headaches.

Over the last 20 years, the smallest mainframe operating system (VSE) has grown considerably in function from the original specification for DOS. Meeting, though lagging behind, user's requirements, VSE and its ancestors acquired a spooling system (POWER), a timesharing system (ICCF), and products for controlling online and database work.

System generation was a major problem until IBM came up with the idea of supplying customers with an integrated, pre-generated version of the software components. This was known as the SIPO/E, and its original version was little short of a disaster. Its reputation was so bad that when one of the SIPO/E development team addressed a meeting of VSE systems programmers in August 1980 and announced that she would be describing the facilities of the VSE SIPO/E Release 2, the audience was cheerfully astounded that IBM would even dare to bring out a second release.

However, IBM persisted, got it right, and the SIPO/E is now part and parcel of almost every VSE installation.

For most VSE or VM/VSE users with average growth, the facilities provided by the existing components are sufficient, and the expected IBM development of VSE is likely to satisfy users' own expanding requirements. Yet for the largest VSE and VM/VSE installations, the principal question is not "Will there be a conversion to MVS?" but "When will there be a conversion?"

Not everything needs to be converted, of course. The principal subsystems for TP (CICS) and database (DL/1), and the major access methods (VTAM for telecommunications and VSAM for data on discs), were developed as cross-system products.

The principal software subsystems for VSE are, fortunately, similar to their counterparts in the OS family of operating systems. Thus CICS and DL/1 components in a VSE installation have formats and facilities which are almost identical to CICS and IMS/DB in an MVS site. Likewise, VSE/VSAM is very similar to OS VSAM (and DF/EF), which means that data can be transported without too much difficulty. VTAM and networking products such as NCCF are also common to both operating environments.

Indeed, the most obvious differences between the VSE and MVS environments are the job control language and the job entry subsystems (VSE/POWER or JES2, JES3).

SSX/VSE provides a Cobol/CICS environment for an application machine. This is a cut-down automatic version of VSE, which employs interactive dialogues to generate commands for job control, such as POWER and VSAM. Typical users would install a package, run the package and be only slightly aware of the system software.

Aimed at installations new to IBM, SSX/VSE, though easy to use, has now had the warmest reception in the market, because it is deemed to be slower and less flexible than native VSE. In a similar way, a car with an automatic gearbox is easier to drive than a car with a manual gearbox, though it uses more petrol and might not accelerate as quickly. Having introduced the idea of automating its operating systems, IBM is likely to spend more effort in making them easier to use. Remember, even the SIPOK idea took time to be accepted.

The main use of VM was originally as a hypervisor, to permit other operating systems or multiple copies of the same operating system to run on the same machine. VM/VSE is the most common combination, though VM/MVS is increasing

The most popular component of VM is CMS. This is a single-user environment which provides full screen editing capability, in addition to powerful, easy-to-use commands and procedures.

VM's rise to popularity was based on three further factors: program development though CMS is very easy; the facilities of ICCF were rather poor for a large number of users; and systems programmers do not need to come in at weekends to test new versions of software if VM is installed.

Although VM is most frequently used as a host, it is also a viable operating system in its own right – ie production does not need a guest operating system, such as VSE.

There are two main drawbacks to VM as a self-sufficient operating system: CICS will not work unless either VSE, VS1, or MVS is present, and VCNA provides an awkward interface to a SNA network.

MVS is the operating system used in the largest sites. It provides all the facilities required by sites with complex online database and batch applications.

MVS comes in two versions: Version 1 is one we have all come to know and love, and offers 24 bit addressing (ie System 370 architecture). Version 2 offers 31 bit addressing and is known as MVS/XA. It removes many of the restrictions that large applicators have encountered, and within three years many installations will have MVS/XA as a matter of course.

MVS provides users of large processors with a flexible, high-performance system, with good data security and integrity. In earlier days, the heavy use meted out to an MVS systems would be primarily batch. Nowadays, it is mainly online.

The online component of MVS applications used to be IMS/DC. However, CICS has ousted this, and is now the most popular TP monitor for large installations, because of the drawbacks of IMS/DC, and because many installations have migrated to MVS from OS/VS1 or DOS-based operating systems. These already had online CICS applications, and their users preferred to keep CICS when in an MVS environment.

An MVS [illegible]

ments grow, they will [illegible] MVS/XA, if only because their [illegible] line systems will be large and c[illegible] plex. Although IBM has [illegible] that development of MVS Ver[illegible] 1 will continue, it has not said [illegible] it will continue in parallel and [illegible] the same rate as MVS/XA. [illegible] MVS growth path is not as p[illegible] lem-stricken as many suppose [illegible] cept on pioneer sites.

In addition to the current [illegible] of software components of [illegible] system, there will probably be [illegible] proved methods of extracting [illegible] from the system. These [illegible] include the relational-style [illegible] base (DB2) and products [illegible] application generator [illegible]

For VM, development will [illegible] tinue. A version that makes [illegible] use of extended architecture [illegible] likely, and a better interface [illegible] SNA networks is highly prob[illegible]

VSE, meanwhile, has [illegible] various attempts to kill it off [illegible] IBM term is stabilise), largely [illegible] cause of the large user base, [illegible] the fact that VM does not sup[illegible] CICS directly. It is reasonable [illegible] expect VSE to continue for [illegible] time to come, but one of its [illegible] drawbacks – 24-bit addressing [illegible] will have to be overcome, be[illegible] many large TP systems are [illegible] fortably close to exhausting [illegible] available 16 Mb of virtual [illegible]

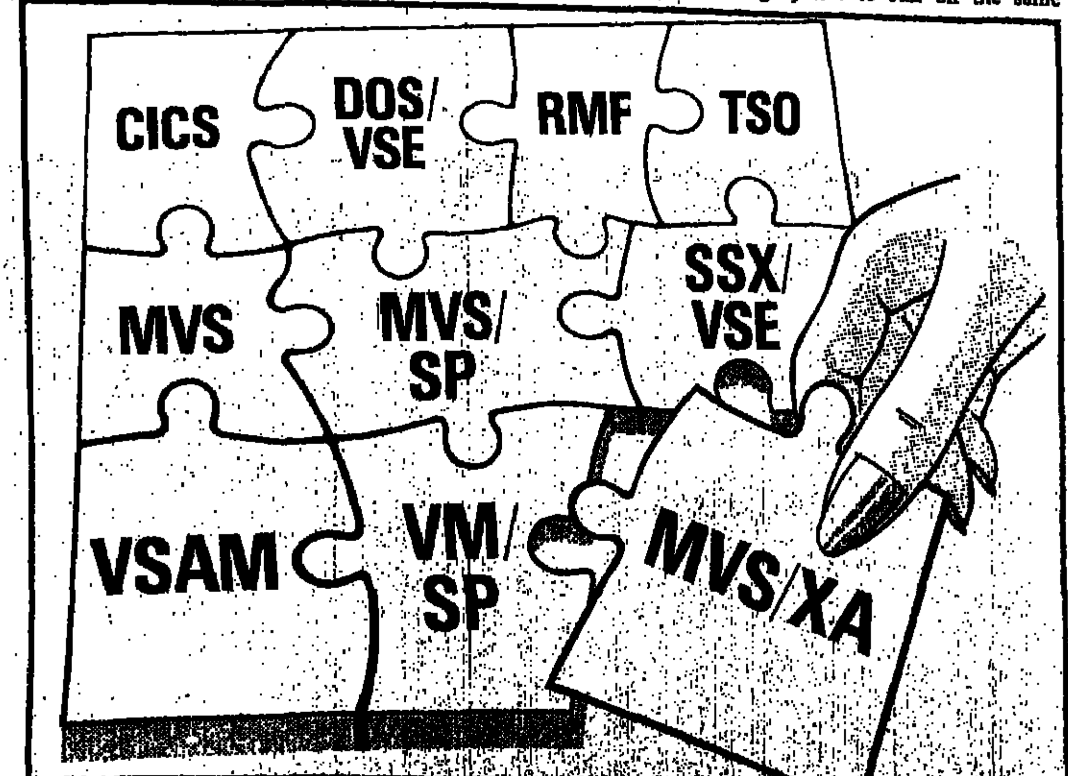
The operating systems [illegible] still very much in IBM's [illegible] and if it wishes to encourage [illegible] in a certain direction, it [illegible]

CICS	Customer Information Control System. The ubiquitous TP monitor.
CMS	Conversational Monitor System. The most popular program development system around.
DB2	Relational-style database for MVS systems.
DF/EF	Data Facility/Extended Function: newspeak for VSAM.
DL/1	Data Language/1; database for VSE systems.
DOS	Disc Operating System, circa 1964.
DOS/VS	DOS/Virtual Storage, circa 1972.
DOS/VSE	DOS/Virtual Storage Extended, circa 1979.
ICCF	Interactive Computing and Control Facility. Timesharing system for VSE.
IMS	Information Management System.
IMS/DB	Database component of IMS. Superset of DL/1.
IMS/DC	Data communications component of IMS. Less popular than CICS.
JES 2, JES 3	Job Entry Subsystem: spooling systems for MVS.
MFT	Multiprogramming with a Fixed number of Tasks. Immediate predecessor of OS/VS1.
MVS	Multiple Virtual Storage i.e. many Virtual Storage address spaces.
MVS/SP	MVS/Sytem Product.
MVS/XA	MVS/Extended Architecture.
MVT	Multiprogramming with a Variable number of Tasks. Predecessor to SVS and MVS.
NCCF	Network Communication Control Facility.
OS	Operating System i.e. OS/360.
OS/VS1	OS/Virtual Storage 1.
OS/VS2	Generic term for SVS and MVS.
POWER	Spooling system for VSE.
SIPO/E	System Installation Productivity Option/Extended.
SNA	System Network Architecture.
SSX/VSE	Small Systems Executive/VSE.
SVS	Single Virtual Storage.
VCNA	VTAM Communication Network Application.
VM	Virtual Machine.
VSAM	Virtual Storage Access Method; controls data on discs.
VSE	Virtual Storage Extended.
VS1	Virtual Storage/1 i.e. OS/VS 1.
VTAM	Virtual Telecommunications Access Method

Table 1: What the abbreviations mean

OPERATING SYSTEM	HARDWARE
SSX/VSE	small 4300
VSE	all 4300
VM	all 4300
VM/VSE	4300, 3083
VS 1	4300 and older (303X, 30[illegible])
VM/VS 1	4300, (3083)
VM/MVS	4341, 303X, 308X
MVS version 1	3241, 303X, 308X
MVS/XA	308X

Table 2: Operating systems [illegible] typical processors.



COMPANY PROFILE

Not everybody who owns an IBM machine buys software from IBM.

For one thing, some of them probably don't think too much of IBM's offerings. And for another, IBM doesn't need to be outstanding at software.

Consequently, as Claire Gooding reports, there are a large number of independent companies supplying software for IBM hardware.

The more choice users have, the better their software is likey to be.

The suppliers who join the bandwagon

WHY doesn't IBM supply all the software for its machines? Some people might say that it doesn't do it well enough. It's closer to the truth to say that IBM probably doesn't want to or need to produce all the software. The third party suppliers do little harm and a lot of good to IBM's own market.

People will not buy machines without software, and the more choice there is the better the software and the support is likely to be.

Commercially, IBM's own software has not done badly. Its software revenue is tucked away with services, which last year clocked up $28 million.

Some software gurus say that IBM software is top heavy, and soaks up machine resources like a sponge, forcing the user to buy more hardware to run it.

Back in 1965, a company called Applied Data Research supplied a commercial add-on to IBM's own software. The product, called Autoflow, was a design aid, and is

Commercially IBM's own software has not done badly. Its software revenue last year was around 10% of its $34 billion turnover

still going strong. Since then the supply of solutions born outside the IBM fold has become big business.

What third party suppliers have to offer is, by definition, something that IBM can't supply. It could be improved functionability, (ie more features) or a lower price or simply a facility not in IBM's catalogue.

Since ADR's first venture into selling add-ons, several companies have flourished to become multinationals themselves: Cincom, Cullinet (formerly Cullinane), Informatics, applications supplier MSA, and a host of others.

The field left open by IBM is so large that many companies make a living out of one particular corner. SKK, for example, well-known for its security software, ACF, or the SAS Institute and ISSCO, both of which make a healthy and ever-growing living out of providing graphics add-ons for IBM systems.

Originally the main concern of most systems suppliers was the performance of the hardware. Suppliers such as Cincom, which made its name with the Total database, could promise the IBM user more efficient use of hardware.

Cincom's lead was followed by Cullinane, which produced the IDMS database which was adopted by ICL. IDMS caught the beginning of the productivity wave. At the end of the late 1970s, CICS and database became the bottomless pits which swallowed up computer and human resources, and the fight was on to supply the quickest, cheapest, most friendly method of avoiding IBM's snares.

CICS aids or substitutes now abound. Informatics supplied one of the earliest, and its Irans IV was launched worldwide in 1980 as a way of de-skilling the CICS environment. Irans IV de-mystified CICS by reducing it to a series of menus and fill-in-the-blanks screens.

Oxford Software's UFO also spread rapidly as a quick-CICS aid, and the arrival of Mantis from Cincom, just in time to replace the ageing Total, brought a new lease of life to CICS.

Most of the productivity aids relied on interactive computing, and made it possible for the first time for end users to control their own data and resources. The idea of relational databases introduced query languages, which enabled end users to select the data they wanted without consulting the programmer.

IBM's own long-running relational database project System R somehow made the whole idea acceptable. It is a notable feature of the dedicated IBM user that until IBM itself does something, it is not quite respectable.

Now most databases offer relational overlays, in the form of fill-in-the-blanks questions which pull all the relevant data into one hit file, and then make a search. Most of these are easier to use and more efficient than IBM's own SQL/DS.

Although the new wave of IBM-compatible relational databases, such as Oracle, have gone further towards being end-user tools, the heirarchical database tools have held their own in terms of productivity aids. Cullinet's IDMS is now surrounded by a host of tools for reporting, querying and otherwise manipulating data.

Other major suppliers such as ADR, have readily followed the pattern of the complete range and the line between systems and applications suppliers, which used to be so clearly delineated, has become blurred. Computer Associates, which used to specialise in performance measurements, now counts human and programmer performance among its concerns, and products such as CA-Scheduler, the automated DP system, are aimed directly at improving productivity.

The line has been blurred further as some of the systems houses move into supplying applications. Computer Associates has recently brought out its own relational database CA-Universe, complete with business applications. Database-related applications brought Cincom into the business of supplying manufacturing software with MRPS and ADR into the financial modelling business with Empire.

It was in the minicomputer market that IBM really discovered how dependent it was on the independent suppliers. The revolutionary database-oriented System 38 took a long time to leave the ground, partly because it was so new that no one was ready with applications.

With the next step, down into the micro world, IBM's reliance on third party suppliers was not only admitted out loud, but enshrined in the marketing policy adopted for the Personal Computer. The dominance of the CP/M operating system in the micro market was a lesson not lost on IBM, and it turned the market on its head by adopting not the well-established CP/M but the MS-DOS operating system from Microsoft.

Selling software into the micro market brought a new set of rules. IBM had plumped for an independently supplied operating system because the experiences of the micro manufacturers had proved that there was little point in providing a native OS, however good, which didn't come within a range of applications.

The motive for choosing an operating system was, therefore, not just technical excellence but the number of independent suppliers that offered packages.

Next, IBM announced a series of approved independent suppliers.

The trouble with that approach, is that purchasers tend to get locked into one supplier, and then find it difficult to buy elsewhere. Where have we heard that pattern before?

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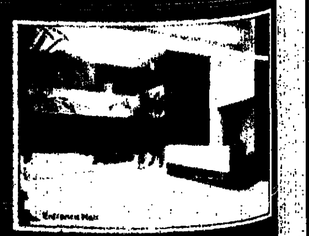

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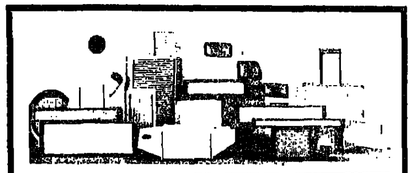

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هكذا في الأصل

COMPANY PROFILE

IBM users may resent the company's dominant position for the ease with which it can enforce price rises.

But most are fairly happy to have secure and reliable hardware which is well-supported.

Philip Hunter has been talking to IBM customers and discovered that most wouldn't dream of switching their loyalties elsewhere, despite tempting offers.

IBM users believe in their benefactor

GOODWIN . . . "Unsatisfied."

GRANT . . . "Top gear."

IBM's continued dominance of the world computer market is a result of the belief that its hardware is more secure, reliable and better supported than rival makes. It is hard to find an IBM user who is not fairly satisfied on these three counts, though it is easy to find one who resents the way the company takes advantage of its dominant position to enforce price rises.

In fact, the most common grievance against IBM is the high cost of hardware rental, maintenance and support. The next most common source of discontent is with the quality of billing – a rather surprising fact that perhaps reflects IBM's strength on support.

But few users find their grievances sufficient to make them consider a change of hardware, which is bad news for the makers of hardware which is plug compatible with IBM's.

Roger Dale, data processing manager for Darlington-based Darchem and vice president of the IBM Computer Users' Association (IBM CUA), probably speaks for many users when he says he would not consider a plug compatible alternative, because he cannot rely on the same level of maintenance and support.

John Grant, chairman of the association, thinks that IBM is in top gear to fight the challenge from plug compatible makers such as Amdahl and National Advanced Systems. IBM hardware prices are falling steadily, reducing the difference in cost between IBM machines and plug compatible equivalents.

IBM's policy over the last few years has been to cut hardware costs as much as possible to stay competitive with the PCMs. But to do this it has had to put up other prices by an amount that some users consider unacceptable.

Last year it misjudged user reactions with its price rises, which brought a pot of simmering resentment to the boil. Two months of hot public debate followed announcement of the rises, concluding with the IBM CUA in the UK winning several important concessions from the company.

These included an agreement from IBM, which has so far stuck, to reduce the number of annual price increases from two to one. Users also won a commitment from IBM to keep them better informed of future pricing developments and their implication at individual installations.

IBM announced this year's price rises early this month, and most users privately admit that they are about right this time. At least they are right in the sense that they are not enough to make users want to change to another manufacturer.

But there is resentment about some of the larger rises, of up to 10%, in rental, maintenance and software support, which in particular affect users of the popular 4300 range of mainframes.

> "Why is it that when hardware gets cheaper per year, the price to users keeps going up?"

Grant sums up the feelings of many users when he poses the rhetorical question: "Why is it that when hardware gets cheaper per year, the price to users keeps going up?"

IBM CUA spokesman George Goodwin agrees: "Some of the increases are unjustified."

However the rises in rental and support costs have to be seen against a background of continuing fall in the purchase price of hardware. And IBM hardware prices have been tumbling faster than most, partly because of competition from the PCMs.

Malcolm Jones, joint managing director of the small Birmingham IBM systems house JBS Computer Services, says that IBM machines now sometimes work out cheaper than rival makes in tenders for contracts: This would have been unheard of a few years ago.

If hardware prices are falling, the price of maintenance has to go up if the turnover of big computer makers is not to collapse. Accordingly, IBM has to play a continuous juggling game with its various prices, trying to gauge what users will take.

IBM itself would deny this, and would justify price increases in software support and maintenance with bland statements about the high cost of its skilled staff and the huge investment being made on new products for the benefit of its users.

But it comes close to admitting that it is pushing its users towards outright purchase of hardware rather than rental. The idea behind this is to make users, instead of IBM, carry the risk of being left with unwanted machines...

Some users think it sign... that IBM's new System 3... was announced in May this... a purchase-only machi... predecessor, the System 3... still be rented.

"The risk to us of machi... ing returned before they... break-even point increase... the life cycle of the produ..." plains IBM's UK general... Tony Cleaver.

Given that IBM is still the... most expensive option, wh... the company continue to... more than its share of fi... users? Grant says that it... stability and credibility of the... pany that attracts new users.

And Jones of JBS say... chose IBM because we... they'd be here for ever."

Another reason for ch... IBM is that the company... good record on providing co... bility between machines. "... pick IBM you can rest ... safe in your bed that in ... come you will have an ... path ready," says Brian El... DP manager at small system... Bespak.

Users are divided on w... IBM provides value for mo... its maintenance agreements... price of maintenance on ... machines was not changed,... some cases was lowered ... latest round of price chang... it went up by 10% for ... machines including the p... 4300 range.

Jones of JBS says he chan... an insurance policy becaus... prohibitive cost of IBM m... ance agreements. When ... goes wrong, the insurance... pany now pays IBM to c... fix it.

Roger Dale, DP manag... Darlington-based Darchem... he has stuck to an IBM m... ance agreement because th... ponse is better. "If there... agreement, IBM can't gua... the response." This app... people using an insurance... as well as to those who ... IBM when they need h... have no agreement.

But Dale is not so happy... another aspect of IBM ... administration and late... Users have been fighting fo... to get more reliable admi... from IBM. There has been... provement, and last ... agreed to give each user a... breakdown of the impli... the price rises.

But IBM's invoices still ... lot to be desired, as wi... an anecdote that Dale ... telling. Dale's company D... got rid of some IBM eq... two years ago, but ma... charges for it still appea... bill sent by IBM as recently... this year.

As Dale points out, IBM ... own computers for comp... bills. "It doesn't ... much confidence in the pro...

One of the burning ... some IBM users is the co... age of relational databa... general trend is to give ... more control of central d...

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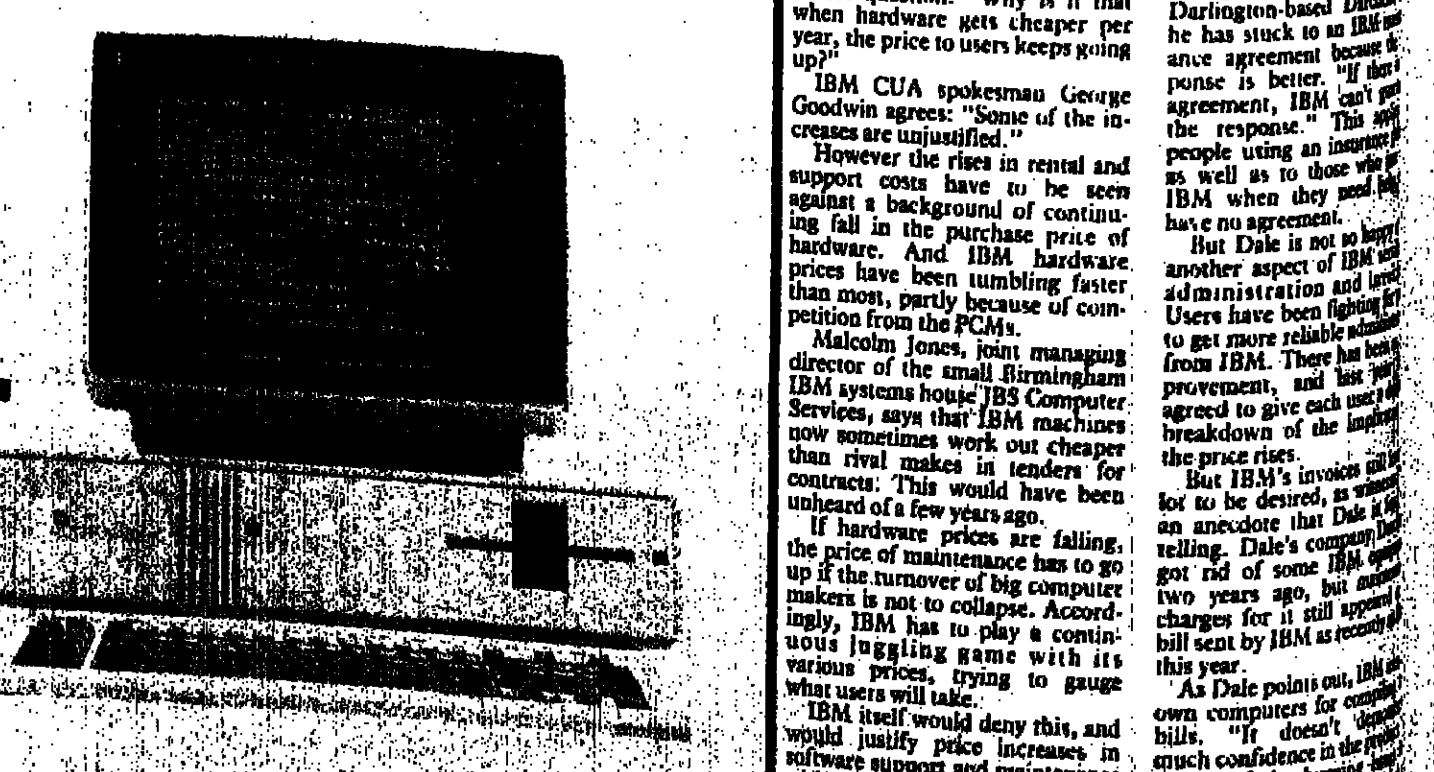

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MICRODATA INFORMATION SYSTEMS LTD (FORMERLY CMC) is a market leader in these fields with an advanced and sophisticated product base supporting 4th Generation languages, artificial intelligence and office and factory automation.

If you can meet the challenge of working in these technically demanding marketing roles, please telephone in the first instance to:

Roy Davis, Marketing Support Manager on Dunstable (0582) 600272 or write with full career details to:

John Paterson,
Personnel Manager,
Microdata Information Systems Ltd.,
Maylands House, Maylands Avenue,
Hemel Hempstead, Herts. HP2 4RL.
Telephone: Hemel Hempstead (0442) 61211

Microdata Information Systems Limited
WE BUILD UNDERSTANDING INTO COMPUTERS

Your Programming skills are your Working Capital
Invest them in a real career

City **£14,000-£16,000**

Our client is probably the most highly regarded consultancy in the banking and financial sector. Within the industry their products are household names.

Their secret is people. The people they employ. Whether as consultants working directly with clients at top management level or as specialists designing and putting together the systems.

What's important to you is the fact that they only ever recruit at the bottom end. So the only way you can go is up. And if you're good you will – fast. In fact, most of their senior managers and consultants are still under 30.

Also you'll find the environment itself unique in as much as you'll be given immediate responsibility and freedom to do things in very much your own way.

Your initial investment will be your degree and at least two years' good programming experience in banking/financial systems, acquired within an IBM and/or DEC environment.

Also you must have worked on at least one relevant project right through to implementation. Some exposure to analysis would be a distinct advantage. Once into the job, it will take all your energies and commitment, your self motivation, problem solving ability and communicative skills.

In return you'll soon be further ahead in your career than you would have thought possible.

Interested? To find out more, contact us quoting reference 6946.

Lloyd Chapman Associates

123, New Bond Street, London W1Y 0HR 01-499 7781

(8563)

Opportunity in

to £13K + Bonus — Herts

Our client is a world leader in the research, development and manufacture of prescription medicines. The continuing commitment of the research and development department to computerisation has led to substantial growth of their computer resources.

Within this sophisticated multi-machine environment (including VAX, PDP11, IBM 4341 and WANG machines) a challenging opportunity has arisen for a person with communications expertise to play a leading role in the following areas.

- *DECNET*
- *ETHERNET*
- *X25*
- *VOICE COMMUNICATIONS*
- *VIDEO TELECONFERENCING*

This position will provide the opportunity to develop existing communications skills designing, developing, implementing and supporting internal and international communications.

A competitive salary will be paid and benefits include a discretionary bonus scheme, free BUPA and life assurance, contributory pension scheme, flexible working hours and relocation assistance where appropriate.

For further information please telephone **Keith Taylor** or write enclosing a full curriculum vitae to our Reading office.

(5840)

McCOURT COUSINS LTD.

27-29 Greyfriars Road, Reading, Berkshire. Telephone (0734) 595346 (24 hours)

Chesham House, 150 Regent Street, London W1R 5FA. Telephone 01-439 6288

SCIENTIFIC/TECHNICAL

Many of our major clients, situated mainly in the South East, currently have a wide range of vacancies in the following fields:-

Software Engineering	£8,000 to £13,000+
Systems Engineering	£9,000 to £13,000+
Scientific Programming	£6,500 to £10,000+

Applicants should be of graduate standard, and have one to five years' experience in a technical/scientific environment.

Preferred languages include FORTRAN IV or 77, PASCAL, ALGOL, CORAL 66, MASCOT and MACRO 11. Some Software and Systems positions also require a working knowledge of INTEL, ASSEMBLERS or Machine Code languages.

Experience with the DEC/PDP ranges, HEWLETT-PACKARD and IBM machines or a variety of microprocessors would be useful in some instances, as would a knowledge of microelectronics.

Salaries and prospects are excellent. Relocation expenses will be paid where necessary.

Please telephone for an application form or write giving full career details

AMES PERSONNEL

6 CHART WAY, REIGATE, SURREY, RH2 0NZ
TELEPHONE REIGATE (07372) 22219 or 22210

CONTRACTS

People Urgently Required
For the following assignments in London

ICL DRS 20 DDS CPM & W/P (Knowledge of BASIC & FORTRAN an advantage)	- ANALYST
ICL IDMS TPMS VME	- ANALYST
ICL COBOL IDMS TPMS VME	- ANALYST/PROG
ICL COBOL VME/B IDMS	- PROGRAMMER
IBM OS/DOS CICS PL/1 COBOL	- PROGRAMMER
IBM CADMAN FORTRAN PL/1	- ANALYST
WANG COBOL	- PROGRAMMER
ICL ME/29 DRS NETWORK IPA	- ANALYST/PROG
SPERRY UNIVAC 1100	ANALYSTS/PROGRAMMERS
VAX 11/780 DATATHIEVE FMS COBOL	- ANALYST/PROG
DG MV/8000 AOS/VS COBOL	- ANALYST/PROG
HP 3000 S 40 COBOL IMAGE	- PROGRAMMER
DEC PDP 11/70 BASIC + 2	- PROGRAMMER
PRIME PRIMO COBOL	- PROGRAMMER
UNIVAC 1108 EXEC 8 FORTRAN 77	- PROGRAMMER
PRIME 850 FORTRAN	- PROGRAMMER

PETROPLAN COMPUTER SERVICES

77 Bedford Court Mansions, Bedford Avenue London WC1B 3AE. Tel: 01-631 5044

CoOperators

VLI House
68-69 St. Martin's Lane
London WC2N 4JS
01-836 8411

ME29 OPERATOR — S.E. LONDON — £6.5-£7k
Involvement with Technical Support is offered by this travel company. You should have a minimum of 12 months' ME29 experience to work a three-shift system, with the possibility of overtime.
Ref: S/1094/C

OPERATOR — MIDLANDS — c£6k
A minimum of 12 months' mini computer experience is required to operate a Data General MV8000. You will be working in a small friendly team covering 24 hours. Benefits include overtime, staff discounts and LVs.
Ref: S/1095/CW

OS OPERATOR — HERTS — c£7k
Young operator with around two years' OS and IMS experience. Knowledge of VS1 and VM would be an added advantage. You will work in a small, friendly operations team working a two-shift system with the opportunity to become involved in all aspects of operations and systems development.
Ref: S/1096/CW

DOS/VSE OPERATOR — HERTS — UP TO £9k
Operator with 18-24 months' DOS/VSE with VM [illegible] also have knowledge of POWER, CICS and CMS.
As well as an excellent salary package the company offer other benefits including [illegible] active clubhouse, and various on-site discount shops.
Ref: SP/1099/CW

Contact Steve Parsons on 01-836 8411 regarding the above requirements

MVS OPERATOR DORSET £8-£8.5 + RELOCATION
Are you a high calibre MVS Operator with some 12/18 months' experience? [illegible] really professional operations department where you will be recognised as an important team member [illegible] Internal promotion has created this rare opportunity for a young and dedicated Computer Operator [illegible] SYSTEM and a RELOCATION PACKAGE are available.
Ref: KS/1097/CW

MVS SHIFT SUPERVISOR — BEDS — c£10.5k + PERKS
Tremendous scope for you to help establish a new site and head up your own shift. [illegible] experience is required with a sound knowledge of MVS, JCL, CICS and VSAM. [illegible] who is already working at Shift Leader/Controller level who is a good technician [illegible] preferably under 30.
Ref: KS/1066/CW

Contact Kay on 01-836 8411 regarding the above requirements

CONTRACT REQUIREMENTS
Urgent IBM Sys 3 Operator
Prime 750 Primos Operator
PDP 11/70 Mumps Operator
DOS/VSE/VM Operator

Please call Sue O'Brien regarding the above requirements on 01-836 8411

FOR SOMETHING A LITTLE DIFFERENT . . .

If your Sales or Marketing career to date is perhaps a little run of the mill, one of these positions [could] offer a welcome alternative.
Currently our Sales and Marketing Division are handling some 60 assignments for similar "chan[ges]"; these are just four.

INTERNATIONAL SALES EXECUTIVE – MICROS
Central London Base — **£24k Package**

Experienced Sales Executive required to develop new business for our client overseas. Proven track rec[ord] required in DP/WP selling directly or through distributors overseas.
Age range is likely to be 28-35 and applicants must relish a start up situation. Business acumen combi[ned] with drive and technical expertise are essential attributes.

SALES OPPORTUNITIES SUPER MINI MANUFACTURER
S. England — **On target earnings £[illegible]**

A leading 32 bit computer manufacturer is seeking to expand its salesforce. They require in particul[ar] individuals with experience of Office Automation, C.A.D. or distributed data processing. Ideally [you] should have a proven sales track record, but pre-sales systems analysts wishing to move into sales [should] also apply.

SALES ENGINEERS MASS STORAGE DEVICES
Home based
North of England & S. Home Counties — **On target earnings to £[illegible]**

This peripherals supplier needs two experienced sales people to sell Disc Drives and Controllers [to] Microcomputer companies throughout the UK. The ideal background would be experience of sell[ing] peripherals in a similar environment. Applicants must be highly self motivated and willing to explo[it] large geographical territories involved.

SALES SUPPORT CONSULTANTS SOFTWARE HOUSE
Middlesex — **£15-[illegible]**

The Professional Services Division of our client requires consultants with 10 years' plus experience [in] D.P. This should have been gained in a sales or sales support role with a software house [or] manufacturer. Experience of IBM, HP, DEC or ICL hardware is preferable as well as D[illegible] systems.
Consultants need to be highly motivated individuals who can contribute effectively to the pursuit of [new] name business.

Please telephone David Jones to discuss your career potential on Lewes (07916) 71271 or write to him at the address below

The Electronics Recruitment Company

Temple House, 25/26 High Street, Lewes, East Sussex BN7 2LU. Tel: Lewes (07916) 71271.

Comms. in Banking
London — to £18,000

This is a particularly attractive part of the computer industry combining, as it does, the areas of international high finance and constantly improving computer communications systems. Our client has a lengthy background in this area using DEC equipment and now requires additional development and support staff. Good commercial experience in banking or finance is the major requirement.

Systems Software
Herts. — £9K-£12K

Continued expansion of our client's system software development has resulted in a number of vacancies for enthusiastic and, above all, outstanding systems programmers and engineers. Opportunities exist in many areas including compilers, application tools, transaction processing, comms., etc. We can introduce you to genuine career opportunities offering significant responsibility at the leading edge of technology.

Pascal Programmers
Sussex — £10K-£15K

Recent major changes to our client's product range necessitate the recruitment of experienced real-time programmers with a background of at least 3-4 years using PASCAL, preferably with Motorola processors. Particular applications include process control, fail-safe error recovery, advanced diagnostics and self-test and on-line communications to micros and minis.

Process Control
Herts. — to £14,000

We are seeking a very experienced person in the area of real-time control systems to solve a range of market needs in the process control field. Candidates must be capable of new product specification and overall systems design. They will follow products through from specification to market launch ensuring continuing product compatibility.

Sen. Systems Analyst
Berks. — to £15K + car

We are seeking candidates with 4-5 years experience in an IBM/CICS environment using DBMS to provide pre- and post-sales consultancy for a prestigious company. You must be a self-starter, have a good client manner and be familiar with assembler and a 4th Generation language (e.g. MANTIS). High rewards await outstanding applicants.

Client S/W Support
Bucks & N.W. — to £16K + car

Continuing expansion in this highly successful manufacturing company opens the door for software people with experience in on-line D.P. systems, T.P. and comms. Candidates will be expected to assist clients with applications development, perform sizing as required and generally act in an account manager capacity. Excellent prospects and reloc. assistance where appropriate.

Field Engineers
Cambs/M'chester — package c£12K + car

Continuing expansion and promotion have created vacancies in this highly successful communications products company. Although data comms. experience preferred we would be interested in applicants with experience as Field Engineers for computer manufacturers. Candidates need to be self motivated with a good client contact manner.

S/W Design & Development
Middx. — £10K-£15K

Two vacancies exist in this development group responsible for the production of Advanced Signal Processing and CAD systems. Packages will include UNIX-compatible Operating Systems, LAN, compilers, high-speed interactive graphics and Videotext look-alike software, using PASCAL and BCPL on Special Processor and system architectures. Degree (or equivalent) and expertise in BCPL and disc-based O.S.'s is essential.

Programmers Minis/Micros
Berks. — £9K-£12K

A successful company with a product having a special place in the communications and travel industry, requires several programmers at different levels to join existing development teams. Areas of relevant expertise include Z80 Assembler, PDP11 systems, UNIX and 'C', PLZ, Viewdata, CP/M, comms. and travel agency applications. Excellent benefits include special holiday discounts.

Comms. S/W Design
Herts/Beds. — to £14,000

Develop your career and your communications software skills by joining a company whose existing range of comms. software is second to none. There are a number of teams working on various developments covering LAN's, X25 and 3270 compatible products. Development is on mini and micro systems in assembler and high level languages. Reloc. assistance where appropriate.

Systems S/W Development
Oxon/Berks. — to £14,000

For anyone who can show 1 to 5 years experience in compiler techniques, software tool development, Artificial Intelligence or scientific programming, here is an excellent opportunity to broaden your experience and advance your career with a respected and successful systems house. VAX experience would be advantageous. Rewards according to experience and ability.

Sen. Systems Engineer
Herts. — c£10,000

Our client is currently seeking hardware engineers with four or more years background in microprocessor or complex logic design to participate in the development of a new series of minicomputers and associated peripherals. You should be able to demonstrate project leadership ability and a sound understanding of peripheral and communications interfaces.

Videotex Development
London — to £16,000

Attractive positions exist for software professionals in the further development of viewdata products and related technologies. Currently using PDP11 and VAX with RSX11 and VMS but shortly adding UNIX and 'C' for development tools. Fortran experience would be of immediate interest. Positions range from development to project management in a customer environment.

UNIX Designers
Herts. — c£12,000

Joining a new development team offers extra opportunity. New product development offers a design challenge and the area of office systems products offers the growth market for the future. All of these are open to skilled operating system software designers with some UNIX experience. Our client is large and successful. They offer long term prospects.

Technical Authors
Beds/Herts. — £9K to £12K

These are no ordinary positions; we are convinced that any technical authors who are seriously interested in developing careers with leading companies in the computer industry should be talking to us. Our clients are seeking experienced authors who can work closely with software and/or hardware development teams to prepare user manuals and operating instruction texts.

Sen. Elect. Engineer
Berks. — £10½K-£12K

The small research unit of a major multinational company currently requires an electronics engineer with 3-4 years experience of digital circuit and computer systems design. You will be supporting the development of image processing and data base applications – orientated systems, designing special-purpose hardware, evaluating equipment etc. Assembler experience a great advantage.

Tandem Development
Middx. — £7K to £12K

Opportunities to work on Tandem computers without previous Tandem experience are uncommon and extremely attractive. Our client wishes to meet genuine systems software development people who are keen to develop their careers in a sofware products company. If you have one or more years experience using assembler and a high level language we would like to hear from you.

Real-time Specialists
Hants. — £13K-£15K

Does your background in systems design and programming include experience of CORAL, MASCOT, INTEL 8086, Vax or Quality Assurance? Outstanding opportunities exist with our client for technical specialists to undertake various activities including software Q.A., consultancy, proposal preparation, etc. with the option of moving into project or general management. These positions offer significant scope for career development.

Systems Consultants
Middx. — to £30,000

A rapidly expanding computer services and consultancy company requires top level specialists in data communications, distributed processing and electronic point of sale systems. Successful applicants can expect to become involved in any or all activities from: Consultancy, project management, system design, program development, system testing, installation and education. Rewards will be consistent with the level of experience.

Sen. S/W Designers
Beds. — to £16,000

An established centre of software development for advanced mini computer systems has identified the need for a major new product. Several very experienced software implementors are required to work together to design and build this product. Most appropriate areas of previous experience are T.P. monitors, comms. and O.S. We wish to hear from people with 6+ years experience.

Open letter to technical and commercial job seekers at all levels:

We are here to help you. Our free service to you is advice and counsel in identifying the most suitable position for the development of your career. Our consultants have held senior positions in the computer industry. They have the experience to understand your needs. If we do not have the position you want, we are prepared to help you find it. Why not accept this invitation to talk over your ideas with us.

Write or telephone (02403) 28383 during office hours –
We are always ready to discuss these and many other interesting positions.
Evenings and weekends only.
Terry Harvey – Great Missenden (02406) 4705
Brian Coates – Chesham (0494) 785722
John Barker – Camberley (0276) 61297

HR — **H. R. Associates Limited** — HR

Executive, Computing and Technical Personnel Consultants
57a Hill Avenue, Amersham, Bucks. HP6 5BX Tel: 02403 28383
London office: Regent Street W1.

The world's leading supplier of information services and products, intends to maintain that position by developing advanced communications systems. In particular, effective electronic distribution of information throughout Europe is crucial to successful expansion in that market place.
IBM Network Controllers, Multiplexers and 327X devices, applying, SNA, IBM-BSC, X25 Technology and ASYNC TTY Protocols, will be used.

A DATA COMMUNICATIONS [illegible]

is required to join the high calibre corporate communications team.
Responsibilities include:-

- Network performance evaluation, modification and design changes
- Planning/installation of facilities
- User assistance/support
- Liaison with British Telecom and European PTT's for technical support (BT)

Aged 24-30, preferably with a degree or technical equivalent, experience must include:-

FIVE YEARS MINIMUM IN DATA OR TELE-COMMUNICATIONS SUPPORT
DATA PROCESSING ENGINEERING AND NETWORKS

A programming background and a second language would be advantageous while self-motivation and good oral/written communications skills are also necessary.
The expansion of communications within the Corporation should ensure outstanding career development potential.
A GENEROUS SALARY OF UP TO £15K will be paid depending on experience. Excellent company benefits, include pension scheme with life assurance, private medical cover and relocation/season ticket assistance, where applicable, will be provided.

Please contact Ivor Brookstone on 01-637 9611

MANAGEMENT & EXECUTIVE SELECTION
Suite 201/208 Albany House, 324 Regent Street, London W1

(6612)

SENIOR SYSTEMS ANALYSTS

CENTRAL LONDON Up to £14,000

A VARIETY OF COMMERCIALLY-ORIENTED DEVELOPMENT PROJECTS, MAINFRAME WITH LARGE NETWORK

Do the following suit your career aspirations?

- the stimulation of a growth environment — DP staff has increased from scratch to over 100 in seven years, and further growth is planned
- the challenge and interest of varied development work — not only financial control applications, but also risk models, scientific, statistical, etc.
- a high level of job satisfaction, resulting from a solid project involvement and personal responsibility
- training in modern techniques, first-class employment conditions, with sound progression prospects and good job security

Our clients have a commercially-oriented mainframe installation, with a critically important function in controlling and monitoring business activities. The latest hardware and software, with a network of over 100 terminals nationwide, are used. To make possible the further growth of effective computer-based systems, we have been retained to recruit additional Systems Analysts at a senior level.

This opportunity will interest people who have:

- solid analysis experience (say, five years or more) including large systems, preceded by COBOL programming
- had involvement from feasibility studies through to implementation
- good leadership qualities and management potential
- sound educational attainments (ideally but not necessarily to degree level)

If you can match these requirements, please ring us in confidence for a career discussion, quoting ref. 194 CW. Messages after hours will be recorded.

EDP SYSTEMS 01.63[illegible] 579[illegible]
52-53 Margaret St. London W1N 7FF

Use your D.P. skills to build a career in Information Services

£9,000-£13,000

We can offer the following attractive career opportunities at our Research Centre, Sunbury-on-Thames, Middlesex which will suit experienced staff who have the skills necessary for the professional and technological development of Information Services.

Our Computing and Information Services Branch is responsible for all aspects of the extensive and expanding information requirements at the Research Centre including information capture, storage, processing and communication. The Branch covers main activities in Applications, Facility and User Support, Operations and Information Services with scope for special projects.

Applications Group develops, implements and maintains management and technical research information systems supported by Facilities and User Group on VAX, UNIVAC and PDP 11 machines operated by Operations Group.

Analyst/Programmers-Applications (2 posts)

to work on solutions to the information requirements of both Management and Technical Research activities (e.g. for Stores, Accounts, General Management, Exploration Research etc).
You will need:
* experience in COBOL and/or FORTRAN on VAX/VMS or UNIVAC OS 1100;
* sound knowledge and practical experience of Database/Information retrieval systems preferably with specific knowledge of one of BASIS, VAX-11 DBMS, DATATRIEVE, DMS 1100, INGRES or RAPPORT;
* a degree preferably in Computer Science or Mathematics although other qualifications with particularly relevant experience will be appropriate;

Computer graphics programming experience will be an advantage.

Analyst/Programmer-Facilities/user support

to work in a team on systems support of the following operating systems:— VAX/VMS, PWB/UNIX, RSK 11 and RT 11. Opportunities for technical programming supporting research projects will also be available.
You will need:
* a degree in Computer Science or Mathematics or other relevant discipline;
* at least one year's experience of systems support in at least one of the following:— VAX/VMS, PWB/UNIX, RSK 11 or RT 11;
* sound knowledge of FORTRAN;

Some experience of graphics will be an advantage.

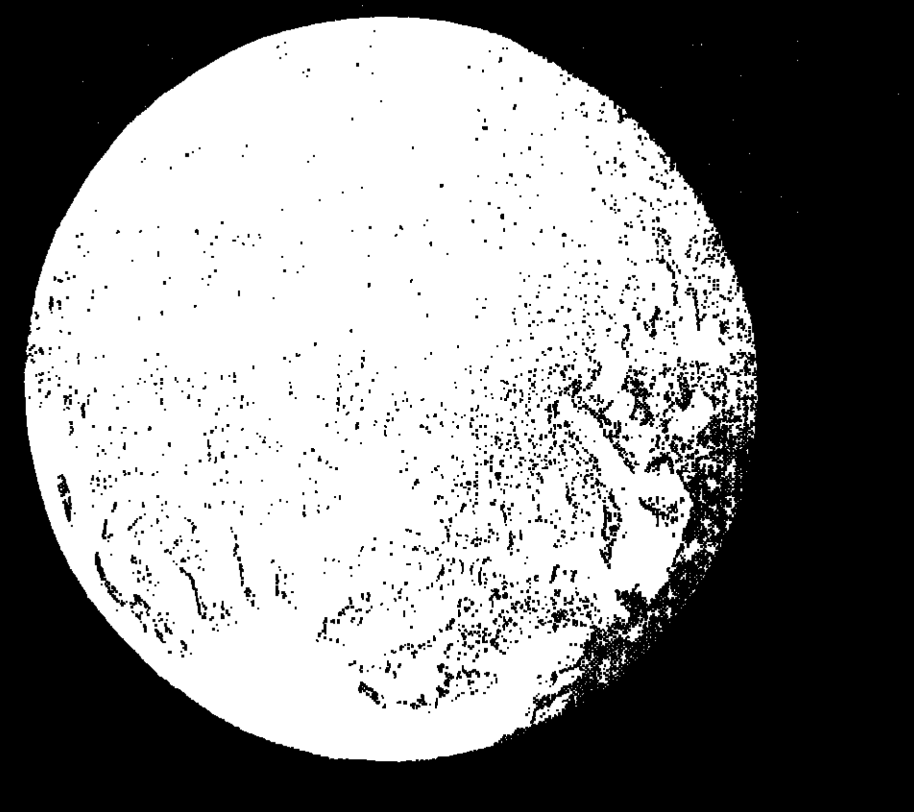
For all posts, sound analytical and inter-personal skills necessary for a service oriented environment plus the ability to contribute to the development of our overall Information Services strategy are essential requirements.

Starting salary will be in the range £9,000 to £13,000 depending upon age, relevant experience and qualifications. Excellent benefits include non-contributory pension scheme, subsidised staff restaurant, sports and social facilities and relocation assistance, where appropriate.

Please write with full C.V., detailing how you meet our requirements to Mrs. Anne Hendry, BP Research Centre, Sunbury-on-Thames, Middlesex or phone her on Sunbury-on-Thames 82634 for an application form.

BP Research SUNBURY-ON-THAMES

REAL TIME...A WORLD OF INNOVATION



Analyst/Programmers and Senior Systems Analysts to £11,000 p.a.

North Wiltshire
(full relocation)

In the world of real time technology, freedom of expression and approach are often constrained by project definition and working practice. The opportunities described below do not subscribe to this attitude and represent first class career positions within a Company well known for its innovative and enlightened attitude. They also represent a real alternative to defence orientated application projects.

Our Client's reputation stretches around the world and they possess unrivalled expertise in the application of real time systems which underlines a capability and intention to remain in this commanding position. With the demand for their products and expertise providing the impetus to push ahead the very frontiers of real time technology, opportunities have been created for key personnel within vital areas.

In essence our Client is seeking high level language experience – CORAL, PASCAL, ALGOL, or FORTRAN – which should have been gained within a real time environment. The nature of their business demands good powers of communication, self-motivation and the ability to be highly innovative in approach. Whilst specific experience is required within the three areas of the Company, it is felt that attitude and interest will probably dictate the definition of suitable areas for each candidate.

Development

This Division is engaged on the development and implementation of mini/micro based real time systems, in the areas of control and monitoring applications. Experience or interest in the increasingly important area of micro technology would be most advantageous.

System Support

This key area supports both in-house and customer developed systems using HP and DEC VAX hardware. Areas include systems and programming advice, technical trouble shooting, CAD support, system enhancements and providing in-house training to system users.

Research and Development

R&D provides the innovative lead in developing new approaches to real time systems using minis and more increasingly micros. This environment is wholly creative and allows for a highly individual approach to software investigation, which results in a high degree of job satisfaction and interest.

Each project requires close liaison with in-house personnel and Client Representatives, and in some areas overseas travel may be expected.

Located in a delightful North Wiltshire town, our Clients offer an attractive relocation facility to those living outside the area. Unspoilt villages and small market towns provide a pleasant alternative to city life, and yet very convenient links with the M4 and M5 allow for commuters to travel from surrounding areas. An excellent railway system and well established shopping centres combine with a wide variety of housing styles to produce a superb setting for a new career.

To find out more about these exciting opportunities, contact the Advising Consultants, **Martin Stainthorpe** or **Brian Harris** on **021-236 3781** (24 hour answering service), or alternatively phone Brian on 0788 77732 (evenings till 9.00pm).

Technical, Sales & Management Appointments

Specialist Computer Recruitment Ltd

SOUTH
James House, 46 James Street
London W1M 5HS
01-935 0671/486 0461

MIDLANDS & INTERNATIONAL
35-37 Great Charles Street,
Queensway, Birmingham B3 3JY
021-236 3781

NORTH
International House, 64 Deansgate
Manchester M3 2ER
061-833 0427

BELGIUM
Avenue Louise 327,
Boite 4, 1050 Bruxelles
010 322-640 7151/71

HOLLAND
Willemsparkweg 92,
1071 H.M. Amsterdam
010 3120-760947

Systems Engineer

Kent **to £13K + Bonus**

A world leader in the discovery of drugs is expanding its chemical research and development facility in Kent. They require a highly motivated computer specialist to take on the challenge of computerisation of the monitoring and control of process plant and be the focus for the planning and implementation of a new computer facility on this site.

The work will involve technical evaluation, implementation and support of research computers and frequent liaison with headquarters in Welwyn, Herts. The successful applicant will require the following attributes:

- **FAMILIARITY WITH DEC EQUIPMENT**
- **REAL-TIME DATA ACQUISITION EXPERTISE**

A competitive salary will be paid and benefits include a discretionary bonus scheme, free BUPA and life assurance, contributory pension scheme, flexible working hours and relocation assistance where appropriate.

For further information please telephone **Keith Taylor** or write enclosing a full curriculum vitae to our Reading office.

MCL **McCOURT COUSINS LTD.**

27-29 Greyfriars Road, Reading, Berkshire
Telephone (0734) 596346 (24 hours)

Chesham House, 150 Regent Street, London W1R 5FA
Telephone 01-439 6288

Real-Time Mini Software Specialists

£10,000-£15,000

Xoron Computing Ltd is an independent UK software house which specialises in consulting and software for real-time computing applications. Formed in 1974, it has particular experience in systems software, communications, office automation and process control using most types of minicomputers and the popular microcomputers. The company develops and markets its own software products and also performs project work for clients.

Some 70 per cent of Company's business involves DIGITAL computers, principally PDP-11s and VAX-11s and the company possesses a range of DIGITAL equipment which it uses for software development. Software assignments are carried out by a team of systems designers, all of whom are graduates, at either the Company's London offices or at client's premises.

Applicants should have a sound knowledge of real-time systems and experience of at least one minicomputer or microcomputer. Please write in the first instance enclosing a cv. to Mr. J. Jarvis at the address below.

Xoron Computing Ltd
28 Maddox Street,
London W1R 9PF
England
Telephone 01-629 6932

The company specialises in multi- and bi-lingual emulations of peripherals. Versatility and innovation are thus, highly prized in the candidate.

A GRADUATE

with minimum experience of two years in microprocessor applications and Z80/Assembler programming is needed to work as part of a small team. Knowledge of 8086 programming is a distinct advantage.

A salary of £7,000 to £10,000 is offered initially depending on experience. Reviews to salary dependent contribution to team effort.

Please send c.v. to: Alphacrete Electronics Ltd. 32 Evelina Road, MITCHAM CR4 3LE

GORDON'S GIN

COMPUTER DEPARTMENTAL SUPERVISOR

c£11000

Gordon's, distillers of the world's largest selling gin, invite applications from suitably qualified personnel for the above position, at the Company's Head Office, Goswell Road, London EC1.

The successful applicant will be responsible to the Computer Manager and will be required to supervise the operating, developing and administration of the Computer, its systems and personnel, and will have had experience at programming, systems analysis and the use of on-line systems on mainframe computers. Additionally use of communication equipment and knowledge of networks would be advantageous.

Company benefits include an attractive salary, BUPA, subsidised lunches, valuable non-contributory pension scheme and 23 days annual holiday.

Please telephone for application form: –

**Mrs. I. Crighton, (01-253 2060),
Tanqueray, Gordon & Co. Ltd.,
260/266 Goswell Road,
London EC1V 7EE.**

ICL CONTRACTS IN THE NORTH

P-E Computer Services Limited, a long-established and highly successful software house has for many years supplemented its own staff resources with freelance professionals.

We currently have urgent requirements for freelancers with the following skills:

**1900 COBOL G3 DME
ME29 IDMS and/or TME TP
2900 VME IDMS
TPMS Technical Support
IDMS Consultant**

Whether you are available now, in the near future, or are considering freelance work for the first time, plan your freelance career by telephoning or writing with your cv to Peter Moore at the address below.

P-E Computer Services Limited
Winchester House, Fountain Street, Manchester M2 2EF. Tel: 061-228 2776

Freelance Assignments

We need professional contractors to join existing teams and to help form new ones. London/Home Counties.

PL/1

★ Designers	DL/1, CICS, DOS/VSE
★ Senior Programmer	DL/1, CICS, DOS/VSE or MVS
★ Programmer	DL/1, DOS/VSE
★ Programmers	CICS, MVS

These assignments start over the next six weeks. Please contact us NOW, regardless of availability.

Please Ring: Sheila Fox
Link Associates Limited
24a High Street, Chesham, Bucks. (0494) 784922

link

IBM Computer Professionals join Aramco - you will be travelling in good company.

Aramco is the acronym for the Arabian American Oil Company and its principle role in Saudi Arabia is serving as a key developer of the Kingdom's Energy Resources. These resources are immense and has given Aramco the distinction of being the largest oil producing company in the world.

Its nerve centre is at Dhahran based on the Arabian Gulf where complete North American style residential communities have been built for Aramco's thousands of expatriate employees.

These vast communities offer a complete range of amenities and recreational facilities that even include desert golf courses. As you will expect, Aramco is a major user of Electronic Data Processing and its attendant hardware and software and its commitment to computerisation is total and on-going, so much so that their computer installation rates as one of the most advanced in the world.

Their newest computer centre EXPEC, which is involved primarily with oil exploration and petroleum engineering boasts the very latest IBM State-of-the-Art-Technology and equipment for which they are looking to recruit professionals with the following skills.

SENIOR OPERATORS–UP TO £20,000+

At least four years experience in one or more of the following categories:
1. Large IBM systems operating under MVS/JES2 or JES3, TSO and VTAM, VM or VM/CMS.
2. Large VAX systems.
3. 3800 printers and microfiche output.
4. Graphics and plotters. (Geospace, Benson, Varian etc.).

SYSTEMS ANALYSTS–UP TO £23,000+

At least five years of experience in a large scale IBM environment, specific skills in MVS, VM, SAS, TSO/SPF are required aligned with a strong background of PL/1 or Fortran. A background in training or instructing would be desirable or experience as a supervisory member of a large project team.

SCIENTIFIC ANALYST PROGRAMMERS–UP TO £23,000+

At least four years' programming experience in Fortran or PL/1 in a large IBM installation, with additional skills in one or more of the following areas:
1. ISPF Dialogue Manager.
2. Project Development Methodology and structured programming techniques.
3. Reservoir simulation.
4. IBM utilities.

SOFTWARE PROGRAMMERS–CIRCA £23,000+

At least three years' pure software experience in an MVS environment with special emphasis on one or more of the following:
Data communications, NCP, VTAM, SNA, General purpose software, PL/1, Fortran or Mark IV.

Selected candidates, who preferably should be educated to Degree level, will be offered an indefinite term contract, initially on single status and a range of benefits that can be compared with the best in the Middle East.

Please contact Caroline Tee for application details, on 01-723 4053, or write in confidence to: COMCAP RESOURCES, 26 Chilworth Street, London W2 6DT. Alternatively complete the FREEPOST coupon below.

The need for computer personnel is on-going and if you are not available at present, you should register now for future opportunities.

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RECRUITMENT CONSULTANTS

...in Durham, bordering the Yorkshire Dales and "Herriott Country"

The European Data Centre for this Major Industrial Group, situated in a modern facility in Co. Durham, requires a Database Specialist to take responsibility for IMS development. Reporting to the Technical Support Manager, you will lead a team within the Information System Group to provide support to the database users in the European Network.

In addition to advising the users you will liaise with the North American Data Centre to ensure that Group wide consistent standards are established and maintained.

In order to meet this challenge you will be well educated, ideally to degree level, with the ability to communicate with your fellow professionals. Extensive database experience is essential, and you should be conversant with the uses and facilities of IMS, with well developed design skills, to enable you to make effective and efficient use of the computing resources.

On the technical side the installation operates under MVS/SP with ROSCOE, ACF/VTAM, NJE and of course IMS. The sophisticated communications network links the two continental centres, providing electronic mail facilities and access to each other's software. Future plans include hardware upgrade and exciting software development.

As described already, the centre is located on the Co. Durham/North Yorkshire border, close to 'Herriott Country' with good road, rail and air links. Housing choice is excellent, inexpensive and varies from sleepy villages to bustling suburbs within comfortable commuting distance.

All this, and a salary of c £12,500, free BUPA and 25 days holiday.

Can you afford not to contact **JOHN WHELAN** on **061 833 0427** (24 hour answering service), or apply in writing to the Manchester Office address:— Specialist Computer Recruitment Ltd., International House, 84 Deansgate, Manchester.

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Specialist Computer Recruitment Ltd

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021-236 3781

NORTH
International House 84 Deansgate, Manchester M3 2EB
061-833 0427

BELGIUM
Avenue Louise 326, Bte 4, 1050 Bxls
010 322 640 7151/71

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010 3120 760947

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Your software skills

will keep them shipshape and watertight

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We have achieved an enviable success record in real time computer systems and we are at the forefront of future generation Sonar, supplying major parts of the latest sonars to the Royal Navy. This military application has given us unique experience utilising highly innovative skills in hardware and real time software for data handling, visual interfaces and display generation. Further developments encompass distributed processing with Argus M700 and Intel 8086 processors interfaced to both Eurobus and 1553B data highways... and we also have lead experience in configuring multi-processor multibus systems under MASCOT.

These exciting developments have created career opportunities for SOFTWARE SPECIALISTS and SOFTWARE ENGINEERS with a degree in an Engineering Subject, Mathematics or Physics and sound experience in real time computer systems.

Informal discussion ... please contact Colin Roberts, Career Development Manager on 061-428 0771 during office hours and 061-428 0194 after 5 p.m. and at weekends, or write to Colin, quoting reference 329/36, at Ferranti Computer Systems Limited, Bird Hall Lane, Cheadle Heath, Stockport SK3 0XQ.

FERRANTI
Selling technology

CAE Development/Support
W Midlands — £7-13K
CAE systems division of manufacturing corporation require staff for new development and package support for engineering design applications. Degree standard applicants should have relevant experience in Fortran/Basic on IBM mainframes under MVS/TSO, or on DEC PDP or similar minis. Senior positions require good experience of structural analysis (finite element)/graphics. **Ref. 601**

DEC VAX Permanent/Contract
West, Wales — £ negotiable
Manufacturing and distribution companies require DEC VAX programmers and analyst programmers at varying seniority levels for commercial applications development in Cobol under VMS. More senior positions call for minimum 6 years d.p. experience including two on DEC VAX. Excellent permanent and contract opportunities. **Ref. 509**

DEC VAX Systems Programmers
Wilts, Avon — £10-12 K + negot.
Subsidiaries of large companies seek two systems programmers for systems software support, performance monitoring, systems tuning and some development work on VAX 11/780's under VMS. One position requires DECNET knowledge, both require good Fortran. Experience in Basic/Assembler/Pascal desirable. Excellent conditions. Relocation assistance. **Ref. 870**

HP Analyst. Programmers
S Wales, Hants — £9-11K
Manufacturing companies with multi location installations in UK and Europe require an analyst based in Wales and programmers based in Hants with a minimum of 1 year's Hewlett-Packard experience on commercial applications. Frequent travel involved – outgoing personalities required. Excellent career opportunities. **Ref. 883**

Write or telephone:
London West Computer Recruitment
Evergreen, Dauntsey, Chippenham, Wiltshire SN15 4JA
Telephone: (0249) 891114

LWCR
London West Computer Recruitment

IBM Programmers
Berks — £9-13K
A major group with a large IBM mainframe network seeks several programmers with IBM Cobol experience to work on on-line commercial database systems using CICS and DL1. First class opportunities for career progression. Excellent salaries and conditions. Re-location assistance. **Ref. 827**

ICL Analysts, Programmers
S Wales — to £12K
Financial services organisation requires analysts and programmers to develop systems on large ICL mainframe. Experience of financial applications essential for analysts. All applicants should have a Cobol background and have degree or equivalent qualifications. Re-location assistance. **Ref. 863**

RPG II/III A/Programmers
Glos, Wilts, Hants — £ negotiable
Manufacturing and commercial services organisations with IBM System 38 installations have vacancies for analyst programmers and programmers with RPG experience. Good salaries and re-location assistance in all cases. **Ref. 787**

IBM Systems Programmers
N Bucks — £9-16K+
Computer services organisation and manufacturing companies require several systems programmers at junior and senior level with experience of MVS/TSO and/or DOS VSE plus CICS. Knowledge of at least one major database software system is desirable. Good benefits. Re-location assistance. **Ref. 884**

Senior Real Time Specialists
Hants — £13.5-15K
Major company developing advanced real time military communications systems need senior real time specialists/project leaders. GEC 4000 and Coral experience is particularly needed. Knowledge of DEC VAX, Intel plus low and high level languages is relevant. Applicants aged c.35 years must have good degree qualifications. Excellent relocation package. **Ref. 746**

Microprocessor A/Programmers
S Glos — £7-10K
Small subsidiary of international group building advanced integrated microprocessor systems requires two analyst programmers to specify and program new sub-systems on Intel micros. A minimum one year's experience of 8085 or Z80 Assembler is essential and PLM or Basic desirable. Good prospects in expanding company. Re-location assistance. **Ref. 877**

Real Time Engineers
West, South, Wales — £10-£15K+
Major companies developing real time applications in telecommunications, process control, telemetry, industrial automation and military systems require experienced team members and project leaders. Computer Science/Engineering degrees essential, plus assembler and/or high level real time language experience. Excellent benefits. Re-location assistance. **Ref. 614**

Electronic Engineers
Wilts — £7-13K
Expanding company manufacturing advanced communications and business systems equipment requires several engineers at junior and managerial levels. Openings exist in testing, QA, reliability assessment, VLSI methodology and electronic design. Applicants aged 25-40 years must have appropriate technical qualifications. Re-location assistance. **Ref. 598**

Programming - with a difference.

At Hambro Life we have a refreshingly different view of what application programmers should be doing.

We think they should be more than just coders. We believe a strong technical Programming Department is essential for the design and implementation of the computer systems which are so central to the administration of our business.

As a result of this philosophy we are building an extremely strong and professional Programming Department which offers unlimited growth to programmers wishing to build technical careers.

Central to our applications software development is the use we make of IBM's database management system IMS - for example we have a network of logically related databases consisting of over 70 million segments. (Our IBM 3081 runs with 3380 discs using Xerox laser printers.)

But Programming at Hambro Life is also different because the company's different. Not content with its position as the country's largest unit-linked life company, and one of the top 100 companies in the U.K., it is now embarking on a programme of diversification and expansion that offers growth opportunities for everyone.

All this activity means that we need more high-quality programmers to join our young professional team. We need people at a variety of levels, with salaries ranging from:

£12500 up to £15000 plus car

We are looking for people with at least 4 years solid application programming experience, preferably in an IBM PL/1 environment (but we frequently retrain COBOL users).

Starting salary will naturally depend on your experience, ability and potential. In addition, our first-class benefits package includes non-contributory pension, profit-sharing and share option schemes, free life cover, BUPA, and generous assistance with moving to this attractive part of the country.

Send now for our explanatory Progamming booklet and an application form, or call **(0793) 46700** (24 hour answer phone).

Please send me your Programming booklet and an application form.

Name_____
Address_____
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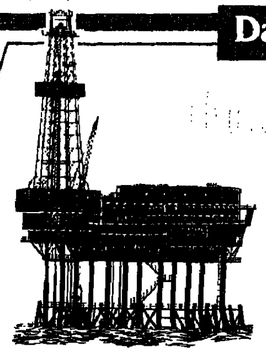
22/9

Post to: **Linda Hobbs, Hambro Life Assurance plc, Hambro Life Centre, Swindon, Wilts. SN1 1EL.**

HAMBRO LIFE

One of the top 100 companies in the U.K.

Data Acquisition, Control & Monitoring



A prime factor in any major project is a structured plan for its future development. The same principle applies to your career.
Our client, a world leader in their field, can offer opportunities for significant career development in the following areas:

Reporting to the R & D Manager, the successful applicants for these two newly-created positions will take full responsibility for new software and hardware systems respectively.
We are looking for young, energetic, innovative people with at least 5 years experience of computer systems development, including management of at least one significant project in the process control or telecommunications industries. Rewards are high and applicants will be expected to show solid evidence of their abilities.

Probably between 30 & 35, you will already have several years experience of management, staff selection, customer contact and inter-departmental liaison. You will be fully familiar with product and project planning and list energy, self-motivation and diplomacy amongst your attributes.

- ✻ £15K-£16K
- ✻ Management Responsibility
- ✻ Company car + petrol
- ✻ 25 days holiday
- ✻ Relocation Assistance
- ✻ Berkshire based

The company is young and successful with a record of rapid yet secure growth. Operating on a world-wide basis, it is committed to major development of existing well established systems including the introduction of state-of-the-art micros and UNIX based software. However, its dynamic organisation includes the intention and capability of diversification into new and promising markets.
If this sounds like your type of working environment, call H. R. Associates now for further details. It could be just what you've been looking for!

Evening & Weekend Telephone Numbers:
Terry Harvey – Great Missenden (02406) 4705
Brian Coates – Chesham (0494) 785722
John Barker – Camberley (0276) 61297

HR **H. R. Associates Limited** HR

Executive, Computing and Technical Personnel Consultants
57a Hill Avenue, Amersham, Bucks. HP6 5BX Tel: 02403 28383

DALROTH

RECRUITMENT CONSULTANTS

LONDON BASED BASIC SALARY £ NEGOTIABLE

Dalroth & Partners is one of the leading international recruitment organisations with assignments currently in the Middle East, Europe and the USA, the majority of which are undertaken on an exclusive basis from initial definition of job specification through to assistance with shipment of families and their effects for many of the overseas appointments.

Consultants joining us at the present time should be capable of assuming full responsibility for recruitment assignments and will be encouraged to build client relationships leading to total account management.

Activities include job and person specifications, advertising copy/layout/placement, screening/shortlisting from advertisements and computer-based candidate files, reference checking, visas, etc.

Currently there is great scope for client development in the UK as well as abroad for both permanent and contract appointments.

Essential is the personality and determination to establish successful client relationships. Experience in either a DP or recruitment environment combined with a Sales/Marketing background would be ideal.

An excellent package will be offered, the format of which is negotiable.

For further information please contact either Roger Allington or Janny Dalrymple-Hay, day on 01-493 2947 or weekends respectively Little Gaddesden (044284) 3538, Beaconsfield (04946) 4679 quoting Ref. 5008.

DALROTH & PARTNERS LTD, 4 HALF MOON STREET, LONDON, W1. Tel: 01-493 2947

IBM COBOL IMS PROJECTS

SOUTH HAMPSHIRE & OTHER UK LOCATIONS £9,000-£11,000

Our client provides a complete data processing service to a major UK group of companies based upon dual IBM OS/MVS mainframes with IMS DB/DC and a large teleprocessing network.

A major new IMS system is currently in the early stages of development and the company now seek to recruit SENIOR PROGRAMMERS and PROGRAMMERS for this challenging project.

If you can offer at least eighteen months IBM COBOL ideally including some exposure to on-line database software you could be given the opportunity to specify and develop new IMS batch and real-time programs. Successful applicants can look forward to a variety of commercial and manufacturing applications development.

Initial interviews for these positions will be conducted in the Hampshire area or at one of the other UK locations but in the first instance write or telephone DP Selection Services to learn more about these opportunities, quoting reference W9 221.

01-434 2042

dp SELECTION SERVICES

2 Swallow Street, London W1R 7HD
"We look forward to hearing from you"

Join our action force

We're Palitoy, the UK's leading toy manufacturers, makers of such famous names as Star Wars, Action Man – and Action Force, of course. Our own Action Force of dedicated DP professionals is expanding to cope with a major development programme on interactive systems based on IBM 38 – and we're currently looking for additional troops (male or female) to join us.

Operations Manager

We now require an Operations Manager, with proven managerial ability to lead a team of 12. Educated to 'A' level standard preferably with a working knowledge of IBM System 34/38.

O and M Analyst

To analyse and appraise our existing systems to ensure that users are adequately trained and that procedures are followed. In addition, the person appointed will assist in the design of new interactive systems and be responsible for ensuring all documentation is accurately maintained during this period of intensive systems development.
A background in DP work and considerable O and M experience as applied to computer systems is essential.

Analyst/ Programmer RPG II/III

To develop interactive systems on our IBM System 38.
We require a minimum of 6 months' GSD experience, combined with analyst/programming experience, using RPG II/III.
In addition, a knowledge of COBOL and BASIC would be an advantage. Good communicative skills are essential to liaise between user and development staff.
As a successful and progressive company we can offer competitive salaries together with attractive employment conditions and relocation where appropriate.
Interested? Think you can handle the challenge? Then write or telephone for an application form to:

The Personnel Department, Palitoy Company, Owen Street, Coalville, Leicestershire. Tel: Coalville 36388.

(5853)

Palitoy

PUTTING TOGETHER THE ASDA TEAM. THE BUILD-UP CONTINUES.

Project Managers

Up to £14,100 plus car
Generous relocation expenses
Share Option Scheme
Training programme

Apart from your technical expertise (developing on-line database systems on IBM mainframes, preferably using MVS and IMS) you will need the skills required to first build then manage a team of up to 15 people, to plan projects and deliver on time and to communicate with all levels within the company.
Current project managers and senior analysts with commercial backgrounds (retailing an obvious advantage) should bear in mind that working for large, growing, successful companies means having a lot of scope, plenty of projects and a secure and stimulating future.
Which leads us to 'Why should I consider working for Asda?'.

Asda Superstores
Size, growth and commitment
Asda is growing in a growth business. Turnover is up to £1.3bn, we have 73 superstores and 18 stores (and rising) selling 27,000 different items, we employ over 20,000 people . . . and – of importance to you – we're committed to ensuring our information systems keep pace with the general growth.

The Strategic Plan
Recently this has meant a close look at how we will satisfy future needs. We call it the Five Year Strategic Plan. Stage One has been to install an IBM 3083 processor and we're introducing EPOS into more of our stores.
However, very few programs are being converted. Instead we are writing new applications – largely for new on-line database systems – some of which will involve the Information Centre also being developed.

The benefits of working for Asda
Head Office Computer Centre is close to Leeds, in West Yorkshire. Communications are excellent in every direction which means easy travel to work from a wide area. The countryside can be stunning – as can the house prices!
Salary apart, there are many large-company benefits including the chance to participate in our success.

Your next move?
This is an exciting opportunity to join a team of people, with strong top-level management commitment, who will revolutionise information systems in a successful and growing company.
To receive an application form and information pack, telephone our consultants, McCourt Cousins Ltd, on Reading (0734) 595346, or write enclosing full CV to McCourt Cousins Ltd., 27-29 Greyfriars Road, Reading, Berks.
Interviews to be held regionally.

ASDA

COMPUTER ENGINEERS

Outstanding opportunities to join progressive companies expanding rapidly in the U.K. and European computer industry.

Field Engineers – Basic, to £10K+ O/T 8/8y, Car etc.
Experience of recognised minis (DG DEC etc) + associated peripherals. London, Home Counties, Birmingham and Glasgow

Work Shop – Supervisor £10K+, Engineers £8K+
Faultfind and repair to discrete level to support expanding "hungry" field team. Recognised hardware. London and Home Counties

Whatever your objective, expand your career, NOW. Ring Mike Hill on 01-549 6441 (office) or 01-394 2359 (outside office hours and weekends, etc)

db executive (kingston) ltd
Specialists in Customer Engineers

SENIOR ANALYST/PROGRAMMERS

IPC Magazines has currently 2 vacancies for Senior Analyst/Programmers for its Computer Development Department.
Hardware being used consists of a PRIME 750 and two PRIME 550's. All systems are written in FORTRAN utilising MIDASPLUS and in-house screen-handling routines.
These positions require a minimum of four years' FORTRAN experience in a commercial environment. One post is in the financial accounts field and a good knowledge of ledger systems is essential. The other post involves order-processing and an in-depth knowledge of PRIME software is required as well as the appropriate commercial knowledge. For both positions the ability to communicate clearly and effectively is essential.
The successful candidates will be expected to make a significant contribution, and be responsible for, the success of these systems.
Benefits include a 32½-hour week, subsidised canteen/restaurant, good working conditions and discounts on Company products.

Written applications with career details to:-
Mr. B.A. Donaldson, Systems Development Manager,
IPC Magazines Ltd., King's Reach Tower,
Stamford Street, LONDON SE1 9LS.
We are an Equal Opportunities Employer.

ipcmagazines

Senior Systems Analyst

Data Base Specialist
ICL 2957 – IDMSX
£14,220-£17,236 inc.

The Electricity Council have decided to enhance their computing facilities, currently GEC, TI and CEGB Bureau (IBM), by taking delivery of an ICL 2957 configuration and the Council are seeking an experienced Data Base Specialist to join a small team implementing an integrated computing and office systems strategy for information Technology.

You should possess:
- ☐ A degree or equivalent professional qualification.
- ☐ Several years computing experience together with experience as a systems analyst responsible for design and implementation of on-line systems.
- ☐ Proven ability to implement on-line Data Base applications with IDMS or IDMSX preferably under VME.
- ☐ Knowledge of Data Base techniques including data analysis, logical design and physical design. Knowledge of ICL 2900 Range, Cobol, Data Dictionary are considered essential and knowledge of TPMS and Query languages desirable. Appropriate training could be made available.
- ☐ Experience in leading multi-disciplinary project teams and ability to communicate successfully with users and application development staff is essential.

Please write in confidence, giving details of career to date and present salary quoting Ref: 81/CW to:

David Webb, Recruitment Officer,
The Electricity Council,
30 Millbank, London SW1P 4RD.

(5884)

ELECTRICITY COUNCIL

DATA COMMUNICATIONS SALES

blue chip products . . . high growth market . . . Southern England

c £22,000+ +CAR

Our client leads the way in the manufacture and distribution of advanced data communications equipment. Their success stems from a dedication to providing their sales team with quality products, backed with strong technical and marketing support. To continue the success story, the company seeks two ambitious sales professionals.

SYSTEMS SALES

With a state-of-the art switching matrix recently launched, you will spearhead the company's drive into the systems area.
You will act upon leads generated by the field and internal sales team and take responsibility for these major orders. A sound understanding of systems selling is required, ideally in a communications environment.

LARGE ACCOUNTS

The broad nature of the product range creates considerable sales opportunities within major key customers.
You will be responsible for further developing relationships with these accounts and securing major contracts. Experience of negotiation with public utilities, multi-nationals etc. is very advantageous.

Both positions offer ambitious sales professionals a superb opportunity to join a dynamic, committed team in which everyone achieved target last year; the remuneration package allows for high base salary, executive car, BUPA, and exceptional commission and incentives plans. Above all, there is the opportunity to develop into management positions within a successful, growth orientated company.

For further information, call Paul Child on Windsor (07535) 56155 or write to Kramer Westfield Associates Ltd, 23 Victoria Street, Windsor, Berkshire SL4 1HE.

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EDUCATION DEPARTMENT (LIBRARIES AND MUSEUMS SERVICE)

COMPUTER SERVICES LIBRARIAN

Grade SO1/2 £9,000 to £10,539

Sandwell Library Service is considering the introduction of an integrated stand alone on line computerised system for circulation control, stock ordering, acquisition and cataloguing. The postholder will be responsible for the necessary investigation of the project and implementation. It is anticipated that the appointment will initially be for a period of three years

Applicants must have considerable experience in staff management and public library computer operations at a senior level, together with the ability to plan, organise, negotiate with suppliers and effectively manage a project of this nature.

A thorough knowledge of public library systems and developments in the new technology is required, together with the ability to work under pressure. Minimum qualification for this post is Associateship of the Library Association, or appropriate equivalent.

Closing date: 7th October, 1983

Requests (quoting Ref. No. 486 and enclosing S.A.E.) for application forms and further details should be made to the Personnel Officer, Town Hall, West Bromwich B70 8DX. A Union Membership Agreement is in operation. Canvassing of members of the Authority will disqualify.

UNIVERSITY COLLEGE LONDON
Computer Centre

PROGRAMMERS

We are looking for a number of PROGRAMMERS to join teams writing software for a service based on linked GEC 4190 computers, providing predominantly keyboard access for staff and students. The Centre is enhancing both the local service and its associated networking facilities and is seeking programmers with an interest in operating systems, telecommunications, compiler maintenance, graphics or scientific applications software. A relevant degree or equivalent professional qualification is required. Salaries will be paid on academic related scales, up to £12,801 (including London Allowance). The initial salary will depend on qualifications and experience.

Applications (no special forms) including full c.v. and the names of two referees should be sent to: Computer Manager, University College London, Gower Street, London WC1E 6BT by 30 September, 1983. Further information can be obtained from the above address or by telephoning 01-388 6721.

(5508)

POLYTECHNIC OF THE SOUTH BANK
Borough Road, London SE1 0AA

COMPUTER SERVICES DEPARTMENT

Application Programmer (2 posts)

Salary up to £9,258 per annum inclusive of London Allowance (Ref. CS13)

Vacancies have arisen within the Computer Services Department for two Programmers in the User Support team to install software packages, develop new software, amend existing software and contribute to the programming advisory service offered to students and staff.

The persons appointed will be of graduate level with a minimum of two years' programming experience in at least two languages. Experience of DEC 10 or VAX Systems would be an advantage.

Application forms and further particulars of these posts are available from the Staffing Union, Tel. 01-928 8989, Ext. 2355.

Closing date for receipt of completed application forms will be October 6, 1983.

(5263)

COMPUTER PROGRAMMER

SV 698 W

Sales and Marketing

Guildford based

Our client is a new software house, which is part of a group that may be fairly described as a "household name." The company will be providing a wide range of solutions to business problems, including consultancy services, bespoke software, applications packages and hardware (both mini- and micro-computers) within specific vertical markets. It is intended that these markets should be Property Management, Commodity Broking and Export Shipping.

The persons recruited to these positions will report to the Marketing Director and must be able to grow with the company, as the UK becomes regionalised and in need of Regional Managers and Managers of teams of sales personnel.

Basic salaries will be around £12,000 p.a. but the on-target earnings quoted will, in fact, have no upper limit.

Please contact Joan Ainsworth on 01-681 8311 or write to her at Computer Search & Selection, 6th Floor, Carolyn House, Dingwall Road, Croydon, Surrey CR0 9XF.

Turnkey Systems

on target earnings **c.£20,000 + car**

If you can prove that you are already very successfully selling turnkey solutions to business problems, we should like to hear from you. While by no means an essential requirement, experience of IBM and/or DEC kit would be of particular interest.

Micro-computers

on target earnings **c.£20,000 + car**

The company will be offering a selected range of micro-computers, including the "SIRIUS," and is looking for a proven track record in micro-computer sales. Initial markets will be in the field of export documentation and general accounting and, while experience in these areas would be useful, the major requirement is the proven ability to sell micro-computers.

Computer Search & Selection

Yusuf bin Ahmed Kanoo is one of the most experienced and widely established Group of Companies in Saudi Arabia, Bahrain and the United Arab Emirates employing a multinational staff. The Group's various Divisions are Freight Services, Travel, Machinery, General Trading, Joint Venture, Aircraft Handling, Business Services and Property

Computer Services Manager

Bahrain
c. £21,000

Our Computer Services Department is currently engaged in the implementation of on-line facilities with over 80 VDUs and printers.

Due to promotions and expansion we are seeking a Computer Services Manager. The successful candidate is likely to be aged 30-40 years, with a Post-Graduate qualification or membership of a professional body and ten years data processing experience which must have provided practical experience in COBOL programming, systems analysis and telecommunications associated with the development of on-line systems as well as a minimum of four years experience in the management of a medium to large DP facility.

In addition to the tax-free salary will be a car allowance, a contributory Provident Fund, free furnished accommodation and excellent terms of service.

Applications with c.v. to:—
General Manager,
Kanoo Group Ltd.,
1 Balfour Place,
London W1Y 5RH

(5570)

Yusuf Bin Ahmed Kanoo

URGENT CONTRACTS

HP 3000 PROGRAMMERS

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BUSINESS ANALYSTS	PH 173
CORAL 66, all levels	SB 150
DATAPOINT Datashare Databus Prog./Analyst	SC 104
GEC Babbage and Viewdata Progs.	SC 166
GEC 4000 and/or CORAL all levels	SC 167
Hardware/Software Engineers	SC 109
Honeywell GCOS, IDS, TDS, COBOL	DB 110
Honeywell L6 GCOS, TPS Tech Support or Systems Progs.	
URGENT!	DB 162
HP 3000 COBOL Progs.	PH 172

URGENT
IBM VM Systems Programmer — CW 114

IBM RPG II Analyst/Prog. with IBM 24 to 36 Migration Course experience	DB 176
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IBM 8100 DFCX or DPPX	SB 115
IBM PL1 with JSP	DB 116
IBM PL1, Adabas	DL 118
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IBM COBOL IMS DB/DC	DB/DL 120
IBM COBOL CICS DL1, some with JSP	PH 121
IBM NOMAD	SB 122
IBM System 38 RPG III	SC 127
IBM MANTIS Progs	PH 158
ICL IDMS Analyst with Inventory Control	PH 163
ICL IDMS Database Analyst	CW 164
ICL IDMS Systems Prog./Designer	CW 130
ICL System 25 Designer and Progs.	CW 133
ICL VMEB IDMS, all levels, some with TPMS	/CW 134
ICL VMEB COBOL with SCL	PH 136
INTEL 8086 Programmers with PLM	DL 137
Michael Jackson structured programming technique with COBOL	DB 139
PDP RSX or RSTS E Systems Prog	CW 171
Technical Authors	DB 174
UNIVAC 1100 COBOL	SC 154
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VAX FORTRAN Progs	DL 175
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ICL VME COBOL Progs
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IBM MVS Operators

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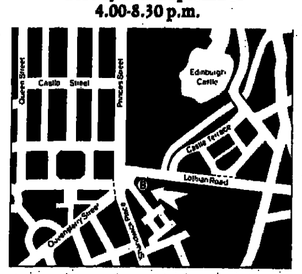

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- Non-contributory pension scheme and other company benefits

Many dealers in the above network also have vacancies for suitably qualified Computer Sales Executives – in some cases opportunities exist for equity participation.

Computer Sales Executives to the Building and Construction Industry

MIDLANDS AND NORTH

B.C.L. exclusively market the Federation of Master Builders approved computer system. Opportunities exist for Computer Sales Executive with experience of the building and construction industry to sell this exclusive package in the above areas.

- Target earnings £22,000 p.a.
- G.L. company car
- Non-contributory pension scheme and other company benefits

Software Managers

SOUTHERN HOME COUNTIES

From a very demanding position, successful Software Managers in B.C.L. derive enormous job satisfaction. Apart from a sound systems background, applicants must have the ability to direct and lead a team of technical staff under their control. Responsibilities include software support in pre-sales, project planning, systems development, installation and customer liaison.

These positions provide a very attractive salary, company car, non-contributory pension scheme and other company benefits.

Project Managers Analyst/Programmers

NORTH LONDON, SOUTHERN HOME COUNTIES, MIDLANDS, NORTH, SCOTLAND

A number of vacancies exist in the above branches for Software People with varying levels of experience in the following areas:

- Project Management
- Systems Analysis/Design
- Customer Support
- Programming

All positions attract good salaries and at Project Manager level include a company car. Responsibilities are varied and challenging and all provide excellent scope for career enhancement.

Field Engineers

GREATER LONDON, WEST MIDLANDS, GREATER MANCHESTER, SHEFFIELD, EAST MIDLANDS, GLOUCESTER

Increased demand for B.C.L.'s products and service has created vacancies in the above locations for experienced Mini and Micro Computer Field Engineers.

Successful applicants can expect an attractive salary, company car, non contributory pension scheme and other company benefits.

Technical Support Engineers

MILTON KEYNES

Engineers with experience of Computer Systems who are qualified to H.N.C. or H.N.D. level are required for the Company's Technical Centre in Milton Keynes. These are interesting and challenging opportunities and responsibilities include new product evaluation and field support. An attractive salary will be paid and benefits include a company car and non-contributory pension scheme.

VACANCIES ALSO EXIST AT THIS LOCATION FOR PCB REPAIR ENGINEERS

For more information on any of these positions offered by our clients Business Computer Systems PLC, please write with full career details to the address below or Telephone 061-236-1157 during business hours. Evenings until 9.00 p.m. telephone JEFF WALTON on 061-962-0002 or ROY TORRES on 0422-823153.

INTERFACE
RECRUITMENT & SELECTION CONSULTANTS LTD.

Manchester House, 86 Princess Street,
Manchester M1 6NG. Tel: 061-236 1157.

IBM

ANALYSTS – Feasibility experience
IBM 3081 DOS VSE Assembler programmer – Hants
IBM IMS DB/DC Systems analysts – Beds
IBM 38 RPG III Programmers – LDN/Swansea – various
IBM 8100 DPPX Cobol analyst programmers – Ldn
IBM MVS ADA DL1 Cobol analyst programmer – Surrey
IBM 370 MVS TSD/SPF Analyst programmer – Herts
IBM PL1 DL1 Senior systems analyst with programming background – Ldn
IBM System 3 Systems analyst – October – Middlesex
IBM OS CICS Cobol programmers – South Coast
RAMIS Contractors – Middlesex
SAS Programmers – Middlesex
IBM 38 RPG III – Ldn – urgent
IBM 4341 DOS VSE RPG II Programmer – urgent
IBM 370/158 MVS DL1 – Programming supervisor and database administrator
IBM Hants – programmer – immediately

DEC

STOCK Control/inventory systems analyst – Herts
VAX 11/750 VMS Datatrieve Cobol analyst programmers – Ldn
VAX VMS Cobol Programmers – Herts and Surrey
VAX VMS Systel programmers – Surrey
VAX 11/780 VMS Fortran programmers – Surrey

ICL

ANALYSTS – Feasibility experience
ICL 2900 VME/IDMS Cobol Programmers
ICL IDMS Senior database designers
ICL IDMS Audit and quality assurance consultant
ICL ME29 the IDMS Cobol analyst programmers
ICL TDRS Analyst programmers
ICL TME IDMS Systems designers
ICL VME/TPMS Senior analyst programmers
ICL IDMS TPMS Analyst programmers and designers
ICL VME Cobol analyst programmers

OVERSEAS

IBM 4341 DOS/VSE CICS DL1 Analyst programmer 18K tax free 12-month contract plus usual benefits – Kuwait
DOS TO MVS conversion experienced programmers – Paris
SEL 32 MPX and HP 1000 Fortran assembler application and system programmers to join our team in Brussels

SOFTWARE ENGINEERS

REAL TIME Programming using assembly language with Intel micro processors "C" or Pascal an advantage – Herts
CORAL 66 Military applications – various Home Counties
PDP/VAX RSX-11M/VMS Coral 66 – South Coast

HEWLETT-PACKARD

HP3000 Quiz Quick programmer – West Scotland
HP3000 Rapid Cobol programmers – Ldn and East Anglia
HP250 Image D/B Basic – urgent – Beds

OTHER

UNIVAC 1100 DMS TIP Cobol JSP programmers – Hants
COMPUTER Automation OPUS 1 Trans Basic programmers – Scotland
PRIME COBOL Programmers – Ldn
VENTEK Datapoint – Programmers
BURROUGHS 68-6900 DMS GEMCOS Cobol programmers – Herts
TANDEM Designers, programmers, analysts – Ldn
MICRO Programmers – CP/M, Basic – urgent – Beds
Z80 Programmer – urgent – London

Tel: Hatfield (07072) 65555

Comac Contracts
Computer Appointments & Contracts Ltd
27 Town Centre, Hatfield, Herts. AL10 0JT
Telex 25102 Chacom G Prefix ISA

Search Consultants

Lloyd Chapman Associates provide comprehensive and efficient assistance to clients in every aspect of the recruitment process, both in the UK and internationally.
With successful operations in the Data Processing, Accountancy, Banking, Sales/Marketing and General Management disciplines, we are proud of the reputation for professionalism that we have gained.
To satisfy the increasing demands for our services, we are now seeking to appoint two self-motivated individuals within our Data Processing Division.
Your responsibilities will be varied, including; establishing and maintaining firm client bases, advising on different methods of recruitment, the planning and management of advertising and search assignments and the marketing of selected people to new and existing clients.
Ideally in your mid to late twenties you must have:

either a provable record of success as a Recruitment Consultant in the Data Processing sector
or a sound background in data processing with a desire to move into a selling environment
plus energy, ambition and determination coupled with good inter-personal and organisational ability

Remuneration – the people we are seeking will be disappointed (and so will we!) if they earn less than £14,000 during their first year. A very attractive package, based on performance, enables a successful consultant to earn in excess of £25,000.

We are a young company – we expect our consultants to become actively involved in the running and organisation of the business and opportunities for progression into management are excellent.

To discuss these positions in more detail and in the strictest confidence telephone or write to David Lloyd.

(5630)

Lloyd Chapman Associates
123, New Bond Street, London W1Y 0HR 01-499 7761

The International Air Transport Association in Geneva is looking for a

MANAGER DATA CENTRE

The main functions will include:

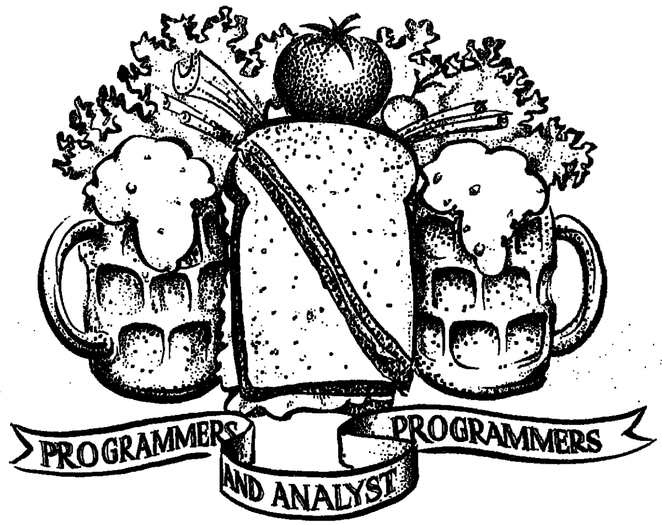
- administering a data centre consisting of a small technical staff with a PRIME 850 and MDS links to remote processors.
- identifying internal automation opportunities and overseeing all phases of project work either by direct involvement or by assignment to third parties. Automation opportunities will cover all aspects of automation from word processing to data processing.

The ideal candidate would have the following qualifications:

- At least 10 years' practical data processing experience in a business environment encompassing:
  - application development from programmer level advancing through systems analysis to project management,
  - central processing operations, distributed data processing involving network communications, intelligent terminals or stand alone micros,
  - office automation involving selection of appropriate hardware and software, local area networks and incorporation of shared resources.
- Proven ability to organise and administer both projects and people.

Experience with PRIME is not essential.
The salary will be around Swiss Francs 75,000 tax free.
Relocation expenses will be paid.

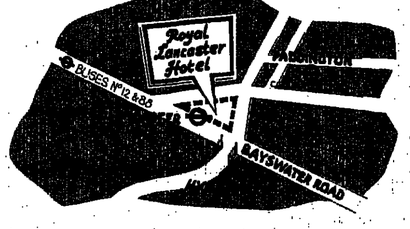
Applications, including curriculum vitae, should be sent to:
Director, Personnel and Pension Administration
INTERNATIONAL AIR TRANSPORT ASSOCIATION
26 Chemin de Joinville
CH – 1216 Cointrin/Geneva
No later than 14 October, 1983



You are cordially invited to a free beer and a sandwich at the Royal Lancaster Hotel on Tuesday, September 27th

. . . And not only a beer and a sandwich but the chance to discuss what could be the most important career development opportunity for you, so far.

DUN AND BRADSTREET, the world's leading supplier of business information services is establishing a new European Business Information Centre in Uxbridge, Middlesex. From a starting point of five countries the centre will provide computerised information services and products to the whole of Western Europe.



The installation will operate the latest IBM hardware, with MVS, CICS and IDMS.

COBOL mainly and ASSEMBLER are the programming languages which will be used for the development of sophisticated on-line and batch systems to process, manipulate and distribute the data.

ANALYST PROGRAMMERS (TO £13.5K)
PROGRAMMERS (TO £12.5K)
QUALITY ASSURANCE ANALYSTS (TO £11K)

Come along to the Royal Lancaster Hotel, have a drink on us, tell us about yourself; and we'll tell you all about this unique development and a career that will be financially rewarding and has the exciting potential to be expected of a "ground floor" project.

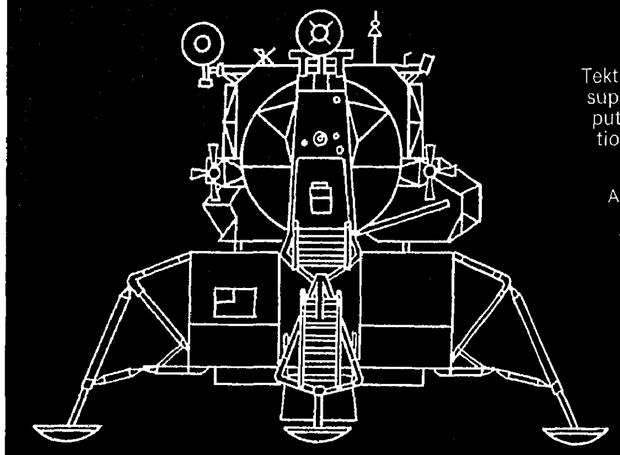
If you require more information before attending or cannot make it on the 27th then please contact IVOR BROOKSTONE or NICK MARSH on 01-637 9611.

(5610)

Tektronix®

COMMITTED TO EXCELLENCE

Sales Executives c £17k +CAR



Tektronix are world market leaders in the manufacture and supply of electronic instrumentation, graphics systems and computer peripherals. They have grown to a billion dollar organisation acquiring a reputation for technical excellence and original design concepts.

An expanding sales programme has created a position for a Sales Executive in the North-West.

You will sell the complete range of Tektronix graphics peripherals and systems to a broad, well established customer base.

You should have a degree level education in a scientific or technical discipline and will either be a seasoned sales professional or be in a sales support role and looking to make your move into a formal sales position.

Applications are welcome from all areas of the UK. A generous relocation package and the usual large company benefits are available.

For an informal discussion ring Kathy Sinclair or Philip Joisce on 01-637 9611

Suite 201/6 Albany House 324 Regent Street London W1R 5AA 01-637 9611

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DALROTH

BUCKINGHAMSHIRE

SYSTEMS DESIGNER/ANALYST

circa £10,000 + Car + Benefits

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Each customer is a new challenge

DRS specialise in data entry techniques which by-pass error-prone and time consuming transcription processes.

A major contributor to that success – the optical scanning systems division – needs your skills and capabilities.

Applications for optical scanning are numerous. DRS is still just scratching the surface. Each new customer will present you with a new project. You will work closely with both customers and other members of a strong DRS team - before and after a sale. You will contribute to the development of new products.

DRS employs nearly 100 people and will soon be moving into its own prestigious and purpose built premises, in the expanding, technology-oriented city of Milton Keynes, with its easy road, air and rail links, reasonably priced and varied housing and superb shopping/sports facilities.

For further information please contact Ian Murray West, day on 01-493 2947 or weekends Milton Keynes (0908) 76544 quoting Ref. 5010.

Interviews can be arranged locally or in London.

DRS has in 14 years become a market leader in the supply of OPTICAL SCANNING SYSTEMS.

- It has built an enviable reputation for the QUALITY of its PRODUCTS & SERVICES.
- It has doubled its turnover since 1980.
- It has a 'promote from within' policy providing an exceptional career path.

On the TECHNICAL SIDE DRS offers:
- Total TURNKEY Projects
- An ETHERNET linking 6 – DEC computers
- PDP 11/60, 11/44, 11/24, LSI/11s and Micros
- FORTRAN, BASIC & PASCAL
- In-depth software and engineering back up

On The PERSONAL SIDE you will find:
- Flexible working hours
- Supportive, enthusiastic and highly skilled colleagues
- Scope for initiative
- Regular pay reviews
- High expectations of your input

DALROTH & PARTNERS LTD, 4 HALF MOON STREET, LONDON, W.1. TEL: 01-493 2947

Electronics Engineers and Real-Time Software Specialists.

The STC Telecommunications Technology Tour

Announcing our Telecommunications Technology Tour, designed to give you first-hand information about STC Telecommunications, our plans for the future and the outstanding careers offered to experienced professional engineers.

You are invited into tomorrow's exciting world of communications.

This is your opportunity to find out more about the important business developments and technological challenges at STC Telecommunications.

As the world moves into a new era of communications we are making increased investment through major growth programmes at our engineering centres in **NEW SOUTHGATE • BASILDON • BRIGHTON • GREENWICH • NEWPORT • SELKIRK** to equip our organisation for an industry that will dominate the 1990's.

Come along to discuss, quite informally, where you and your experience and qualifications could fit in with our future plans for voice, data and visual communications – which will be more sophisticated, more efficient and faster than anything experienced by our modern society to-date. Our technical people will be on hand to answer your questions about our future products and their applications and our support facilities.

There are opportunities for experienced engineers at various levels of seniority including Principal Engineers and Project and Design Managers. We are particularly interested if you have expertise in one or more of the following disciplines.

- **High and Low Speed Logic**
- **Digital Signal Processing**
- **Semi-Custom Design**
- **Microprocessor Application of fast Analogue to Digital Converters**
- **Analogue Design**
- **Electro-optic Components**
- **Digital Systems & Networks**
- **Switched Mode Power Supplies**
- **Circuit Design translation for Drawing Office**
- **Project Control**
- **CAD Software**
- **Computer Support**
- **HW/SW Design**
- **Software Quality**
- **Real-time Systems Design**
- **Diagnostic Software**
- **Software Integration**
- **VAX/IBM Software Support**
- **Microprocessor Circuits**
- **Hybrid Circuits**
- **Component Evaluation**
- **RF**
- **Time Division Multiplexing**
- **Defence, Sonar & Marine Systems**
- **Logistics Support, including R & M**
- **Quality Planning**
- **Advanced Cable Design**
- **Control Gear & Instrumentation**
- **Acoustic Arrays**
- **Operational & Material Assessment**
- **PCB Layout**
- **Technical Writing**
- **Test & ATE Planning**

If you are determined to build a successful career in **TRANSMISSION – INFORMATION TERMINALS – SWITCHING – DEFENCE SYSTEMS – CABLE PRODUCTS**, make a note in your diary now to visit our **TELECOMMUNICATIONS TECHNOLOGY TOUR** when it's in your locality.

If you're unable to get along you can phone Bill Wright at our Engineering Resource Centre now on 01-368 1234 ext 3370 or write to him enclosing your c.v. to the address below quoting ref CW/17. As soon as we hear from you, we'll send you a detailed information pack.

The Engineering Resource Centre (Bldg 2) STC FREEPOST, London N11 1BR.

Where you can visit our Telecommunications Technology Tour.

We'll be at the following hotels from 4.30pm-9.00pm on the dates stated.

LONDON The Imperial Hotel, Russell Square, WC1 on Wednesday 28th and Thursday 29th September and on Wednesday 5th and Thursday 6th October.

BRISTOL The Unicorn Hotel, Prince Street, Bristol on Wednesday 28th and Thursday 29th September.

MANCHESTER The Post House, Palatine Road, Northenden, Manchester on Wednesday 28th and Thursday 29th September.

NOTTINGHAM The Albany Hotel, St. James's Street, Nottingham on Wednesday 28th and Thursday 29th September.

COVENTRY The Hotel Leofric, Broadgate, Coventry on Wednesday 5th and Thursday 6th October.

EDINBURGH The North British Hotel, Princes Street, Edinburgh on Wednesday 5th and Thursday 6th October.

READING The Post House, 500 Basingstoke Road, Reading on Wednesday 5th and Thursday 6th October.

CRAWLEY The George Hotel, High Street, Crawley on Wednesday 5th and Thursday 6th October.

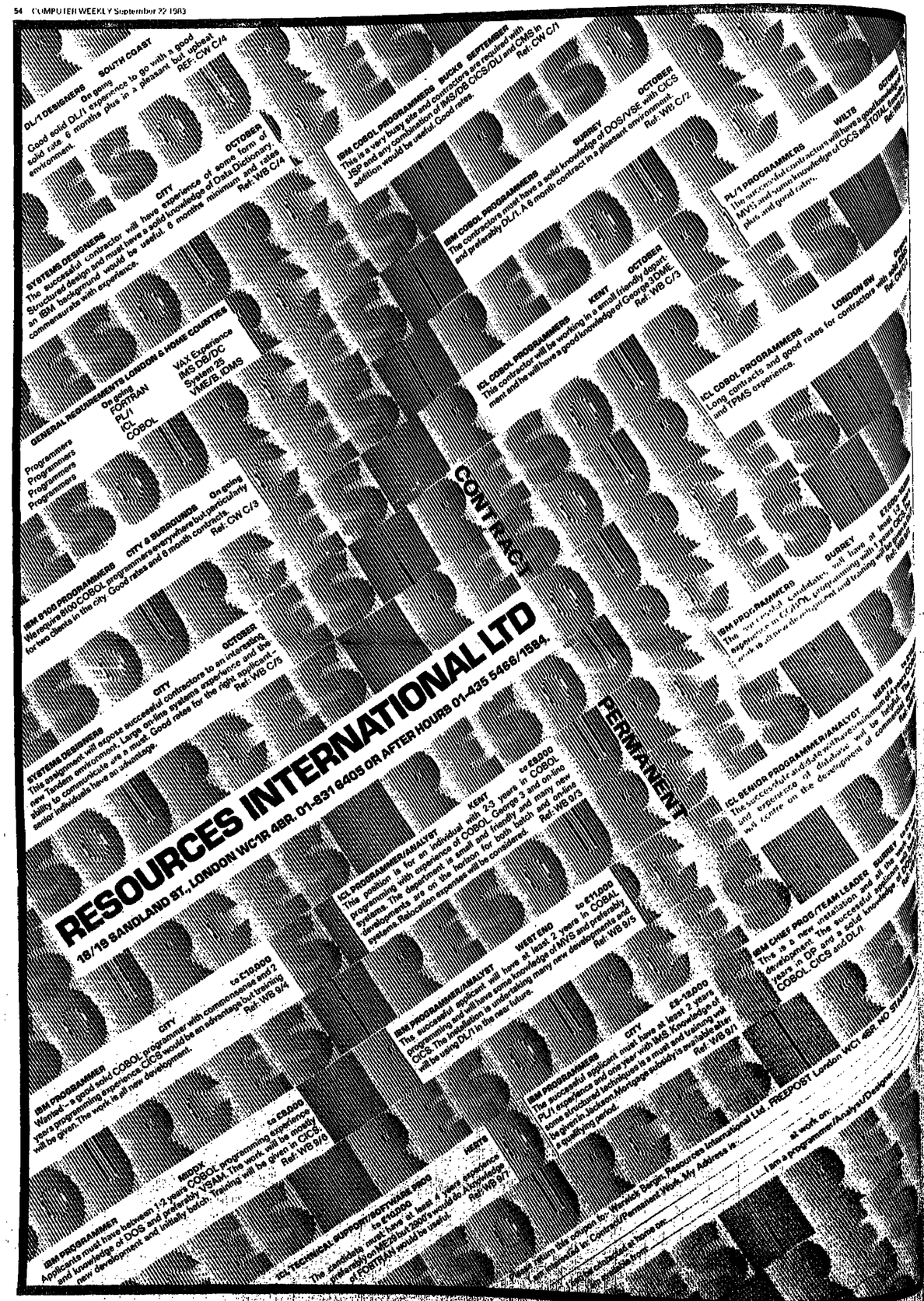
WELWYN The Clock Motel, Welwyn on Thursday 6th and Friday 7th October.

BRENTWOOD The Post House, Brook Street, Brentwood on Wednesday 12th and Thursday 13th October.

Developing tomorrow's communications technology.

STC Telecommunications

STC



OPERATORS

OPERATIONS SUPERVISOR £9,500
IBM DOS/VSE, VM
Company based in North London/Middlesex borders seeks experienced person, FOUR YEARS' DOS/VSE, VM & CICS with supervisory skills.

SHIFT CONTROLLER £10,500
IBM MVS/JES2
Well-known company situated North of London seeks a professional with approx. FIVE YEARS' supervisory experience and good knowledge of MVS/JES 2.

SHIFT LEADER £9,500
IBM OS/VSI +Perks
&
NETWORK CONTROLLER £9,500
CASE DCX or SIMILAR +Perks
Financial concern based in London require two people, one of which should have TWO TO THREE YEARS' OS/VS1 experience with supervisory skills whilst the other should have an extensive knowledge of Telecommunications for Worldwide Link-ups.

OPERATOR c.£9,000
IBM MVS/JES2
International company in London seek an Operator with TWO TO THREE YEARS' MVS/JES2 experience.

OPERATOR/NETWORK c.£8,200
DEC/PDP +Perks
Financial company in London seek an experienced operator who is interested in becoming more involved with Network Control.

OPERATOR c.£7,000
VAX/VMS
Famous company in N.W. London seeks VAX/VMS Operator or experienced DEC/PDP Operator.

SYSTEMS & PROGRAMMING

PROGRAMMERS to £14,000
IBM PL/1 LONDON
Major expansion within this progressive company in Central London has led to vacancies for all levels of Programmers. Opportunities exist within the Systems Development Teams for people with a minimum of 18 MONTHS' PL/1 experience. Client retains IBM mainframes running under MVS using CICS and DL/1. Phone now for further details.
★ TRAINING IN CICS & DL/1
★ FLEXITIME, PENSION & LIFE ASS. SCHEMES
★ NEW DEVELOPMENT PROJECTS

PROG/ANALYSTS c.£11,500
IBM COBOL LONDON
This International Company based in Central London seeks to recruit career minded individuals to enhance their young dynamic data processing team. They retain IBM 4341 mainframes running under MVS using COBOL CICS and DL/1. If you have a minimum of TWO AND A HALF YEARS' IBM COBOL, they in return can offer TRAINING in CICS and DL/1, TRAINING in ANALYSIS, much USER contact and LARGE Development systems.
★ EXCITING PROFESSIONAL ENVIRONMENT
★ NON-CONTRIB. PENSION SCHEME & FREE LUNCH

PROGRAMMERS £11,000
+ SUB MORT.
IBM COBOL LONDON
This prestigious firm of Merchant Bankers based in the City can offer exciting career moves for PROGRAMMERS with a minimum of 18 MONTHS' IBM DOS COBOL and SIX MONTHS' CICS experience.
Ideal applicants should be ambitious and looking to progress into analysis. You will be offered varied FINANCIAL DEVELOPMENT projects, DATABASE training, super working conditions, excellent perks which include subsidised mortgage, and excellent career path.
★ EARLY REVIEW
★ INTERNATIONAL TRAVEL

ANALYST/PROGS c.£13,500
IBM COBOL MIDDX
Work on a NEW DEVELOPMENT PROJECT. Our client, an international fast-moving organisation seeks to recruit Analyst Programmers to be involved in the development of a new package. Company retains IBM 4300 hardware running under MVS using COBOL CICS and DATABASE. Applicants should have a minimum of TWO YEARS' COBOL plus good analytical skills, and also be able to demonstrate enthusiasm and career commitment.
If you want to be part of this company's continuing success story – Phone Now.
★ TRAINING IN CICS AND DATABASE
★ EXCITING FUTURE

PROGRAMMERS £12,000
DATAPOINT
DATABUS LONDON & MIDDX
Are you looking for a challenging position that can offer you real career prospects?
We have at present requirements from companies based both in LONDON and MIDDLESEX for exp. Datapoint Databus Programmers. Companies offer excellent starting salaries plus early reviews, opportunities for travel and user contact. Applicants should have a minimum of ONE YEAR'S experience on DATAPOINT hardware.
★ REWARDING CAREER
★ VARIETY OF WORK

PROGRAMMER £8,000 neg
IBM COBOL MIDDX
This rapidly expanding company based in MIDDLESEX seeks a PROGRAMMER with 12 MONTHS' COMMERCIAL IBM COBOL experience. The client retains IBM 4300 Mainframes running under DOS/VSE using COBOL, CICS and DL/1. Successful candidate will be trained in TP and DATABASE and be involved in the development of a wide variety of large systems. This is an ideal opportunity for an ambitious person as company offers career development.
★ TRAINING IN CICS AND DL/1
★ EXCELLENT WORKING CONDITIONS

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LEADING DECISION SUPPORT SOFTWARE FOR MICRO, MINI AND MAINFRAME

REALISTIC EARNINGS £25,000+

SOUTH OF ENGLAND

5 FIGURE BASE SALARY + CAR + PROFIT SHARE

EPS Consultants is the leading British-based supplier of MICRO, MINI AND MAINFRAME Financial Modelling and Business Planning systems software. As a well established and expanding company, EPS has a current group t/o of £7m, encompassing 1,000 clients worldwide – including 65 of the UK top 100.

Available on most systems (IBM, ICL, DEC and WANG etc.), FCS-EPS has proved to be a highly comprehensive Business Planning tool incorporating Colour Graphics, Screen Management and an Integrated Relational Database. EPS has recently launched FCS-MULTI, a multi-dimensional consolidation system, and in line with expansion several new positions have occurred.

Currently, EPS Consultants is seeking ambitious and successful sales consultants with a sound understanding of Financial Business Systems. Your background could cover either Bureau, Mainframe or Micro experience with a proven record of senior level negotiation.

While FCS-EPS services the large/medium systems market, the launch of Micro-FCS has opened major new business opportunities. This Fourth Generation software has been developed for Unix, MSDOS and CP/M based Micros, including the IBM PC., SIRIUS, FORTUNE and APPLE.

If you have the required skills and personal motivation to sell Micro, Mini or Mainframe Solutions, EPS will offer you a high degree of responsibility within this expanding area of financial software sales.

For an initial discussion on these positions, please call Clive Lester on 01-579 6931, or alternatively write to him at the address given.

EPS CONSULTANTS LTD
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AIR CALL
computer systems

AIR CALL COMPUTER SYSTEMS is a rapidly expanding software house. Allied to the recent success of our parent, Air Call PLC, we are investing substantially in unique products and services which will make us a market leader in chosen areas such as VIEWDATA. We are already well established as a reputable HEWLETT PACKARD OEM with undisputed expertise in turnkey systems, bespoke or packaged software, support and training.

SALESMAN – on target C £25,600 + prestige car

We want assertive salespeople capable of pioneering unique, market leading products into commerce and industry. Experience in selling minicomputer-based business systems is a pre-requisite, as is a proven track record and high degree of self motivation. Basic salary and the commission plan reflect the trail-blazing nature of your selling.

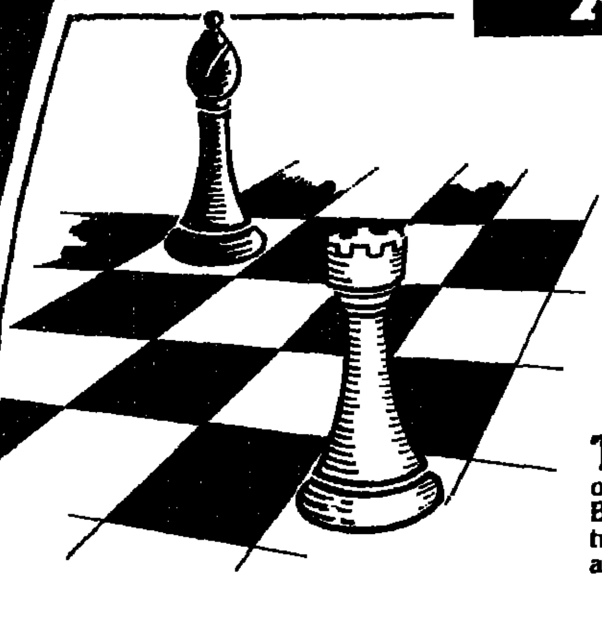
PROGRAMMERS C £8,000

The applicants should have a minimum of 2 years' programming experience in at least one of the following languages: COBOL, RPG, BASIC. It would be an advantage if this experience were obtained on an HP 3000 system with knowledge of VIEW and IMAGE. The work could be for the parent company or clients, which means that applicants should be flexible in terms of travelling and working away from Dunstable. Applicants should also be generally knowledgeable of commercial practices.

Please write, enclosing a cv, to Mr G. J. H. Shaw, ACCS, Air Call House, 105-111 High Street, Houghton Regis, Dunstable, Beds. Telephone: 0582 64191.

(6583)

X25 Network Control



Your move to a rewarding career in a major networking project!

The Company: Our client, a large and successful computer manufacturing company, is about to embark on a major new project to control one of the largest high-speed networks in Europe.
Based in the attractive Hertfordshire green belt area within easy reach of London, the company has an outstanding track record in communications development. The work is challenging and will suit motivated professionals who seek a rewarding career.

Comms. Consultants to £18K.

To be responsible for design studies, system design and sales support activities on general networking and communications projects. Candidates should be able to show at least 8 years experience of the computer industry, including the design and installation of communications networks and extensive client contact at the highest levels.

Team Leaders to £14K.

To carry out systems design and to lead a team of programmers on the implementation of projects arising from such designs. There will often be an element of client liaison in these positions.
We require at least 6 years experience, including the design and installation of systems with some communication content and responsibility for development staff.

to £11K.

Successful applicants will design and implement systems software under the guidance of the team leaders and will supervise the work of programmers within the team. At least 3 years experience is required which should include involvement in the successful implementation of a significant project.

Usual large company benefits including relocation assistance where appropriate.

Evening & Weekend telephone numbers
Terry Harvey – Gt. Missenden (02406) 4705
Brian Coates – Chesham (0494) 785722

HR **H. R. Associates Limited** HR
Executive, Computing and Technical Personnel Consultants
57a Hill Avenue, Amersham, Bucks. HP6 5BX Tel: 02403 28383
London office: Regent Street W1

U.S.A.

Analyst/Programmers to $35K+Bonus

Exciting permanent career opportunities currently exist with a major U.S. bank who are at the forefront of banking systems technology. Current developments include real-time international fund transfer systems on the latest IBM hardware and software configurations.

Our client has successfully recruited over 200 UK computer professionals into the USA over the last four years. They are therefore well qualified to advise on every conceivable aspect and make all necessary arrangements to ensure that the move to the U.S.A. is completed smoothly.

Graduates with more than 18 months IBM COBOL should have at least one of the following:

- *CICS*
- *IMS DB/DC*
- *DL1*

These are genuine opportunities for fast career advancement on the most up-to-date techniques in an exciting and dynamic environment. Real management opportunities exist and continual in-depth training ensures a high level of skill and awareness is maintained. Fringe benefits include a generous bonus scheme and full relocation assistance for single or family status.

For further information please telephone **Keith Taylor** on (0734) 595346 (24 hour answering service) or write enclosing a full C.V. to our Reading office.

(5630)

MCL **McCOURT COUSINS LTD.**
27-29 Greyfriars Road, Reading, Berkshire
Telephone (0734) 595346 (24 hours)

MACRO II
ASSEMBLER PROGRAMMERS
Minimum 2 years MACRO II ASSEMBLER/RSX11/
COMMERCIAL WORK
Long Term Contract LONDON
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WELCOME TO THE ARC
2 x DATABUS PROGS
2 x DATAPOINT ANALYSTS
IMPLEMENTATION SUPPORT ANAL
ABOVE PERMANENT STAFF NEEDED IMMEDIATELY
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at KPG or 01-747 0968 (eves/weekends)

KPG 01-948 5921
KPG Computer Support Services Limited
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Richmond, Surrey TW9 2R

MINI-MICROS WEST COUNTRY
SOFTWARE ENGINEERS
£7-£14K
Diverse and challenging projects within real-time environments utilising latest developments.

- ★ 16 Bit micros using Assembler/CORAL/PASCAL
- ★ PDP II/VAX for control, Data-Acquisition Telemetry
- ★ Telecoms, CAD, Graphics Systems

LET AB SHOW YOU THE WAY

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BOX NUMBERS
Box number replies should be addressed to:
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c/o Computer Weekly
Quadrant House, The Quadrant
Sutton, Surrey SM2 5AS

We have available a large number of contracts in U K and abroad.

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ACTS

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IBM

IBM PL/1 IMS DB TSO/SPF PROGRAMMERS
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IBM IDMS DATABASE ANALYSTS
IBM VM/CMS SYSTEMS PROGRAMMERS
IBM SV/38 RPG 3 PROGRAMMERS ANALYST/PROGRAMMERS
IBM IMS DB/DC COBOL ANALYST/PROGRAMMERS (URGENT)
IBM MVS TSO FORTRAN PROGRAMMERS PROGRAMMER/ANALYSTS
IBM DOS CICS DL/1 PROGRAMMERS
IBM MVS IMS DB/DC JACKSON PROGRAMMERS
IBM 4300 COBOL MANTIS PROGRAMMERS
IBM SYSTEM 38 MAAPICS ANALYST/PROGRAMMERS
IBM MVS COBOL IMS DB/DC PROGRAMMERS ANALYST/PROGRAMMERS
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RPGII? . . . LEARN RPGIII/IBM SYSTEM 38

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Our client provides complete data processing services to a well-known UK-based group of companies.
Several of the sites currently house IBM System 34s however the majority are installing new IBM System 38s and subsequently our client is willing to give full training in RPGIII to competent and experienced RPGII programmers.
The position will involve considerable client contact, with the opportunity to travel in the UK if desired. The company is expanding and can therefore offer good promotional prospects.
For further information on this position telephone or write quoting reference A1.

PL/1 OR COBOL PROGRAMMERS – USER LIAISON

WEST/CENTRAL LONDON **£8,500-£13,000**

Computer development is expanding rapidly within the data processing department of our client an internationally established company. Key requirements now exist for PL/1 or COBOL programmers to undertake challenging project development work including liaison with User staff at all levels.
You must possess a minimum of eighteen months PL/1 or COBOL and candidates with non IBM COBOL will also be considered.
If you are seeking a lively and progressive environment write or telephone now quoting reference A2.

IBM COBOL – SOUTH COAST

PROGRAMMERS **£9,000-£10,000**

If you are currently a programmer with at least two years' IBM COBOL and wish to work on IMS database development both batch and online then you will be interested in the challenging developing projects currently underway with our client. If you can also offer some experience of database and online systems then opportunities exist at senior programmer level to specify and develop new IMS programs.
Write or telephone for more information quoting reference A3.

CICS & DL/1 TRAINING

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If you seek on-line database projects then write or telephone now quoting reference A4.

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An expanding commercial organisation utilising an IBM 4300 mainframe is now seeking to recruit additional analyst/designers for a range of new projects. If you can offer a sound background of systems and/or programming experience you could be given the opportunity to develop new on-line systems for the mainframe or investigate the application of mini and micro computers to an interesting business area.
To progress an application telephone or write quoting reference A5.

IBM ASSEMBLER PROJECTS

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Our client a dynamic organisation provides advanced data processing and computing services to a range of clients including Banks and Insurance Companies. IBM ASSEMBLER is utilised for applications development and the company now wish to recruit staff for new projects involving on-line systems.
Candidates should offer a minimum of eighteen months IBM ASSEMBLER either DOS DOS/VSE or MVS and be capable of progressing to a design role in the near future.
If you can offer IBM ASSEMBLER write or telephone now quoting reference A6.

These are just some of the career opportunities that we are currently assisting our clients to fill. We would be pleased to talk to you regarding these and many other vacancies that we are currently aware of. Telephone one of our consultants to discuss your particular requirement and how DP Selection can help you.

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Ref: T1985

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IBM RPGII ANALYST/PROGRAMMERS

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International bank has openings for System 34 RPGII Programmers with 2 years' + experience. Banking exp. is not essential. You will be involved in the design through to implementation of new systems. Occasional overseas travel. Excellent prospects and benefits package.
Ref: M2110

IBM ANALYST/PROGRAMMER

CITY **£10,000-£14,000**

Due to expansion, this financial concern has an opening for an IBM Analyst/Programmer. Current configuration comprises an IBM 4341 with DOS VSE and CICS thus suitable applicants should be conversant with on-line programming and should also possess specification experience. The successful candidate can expect high remuneration and the early prospect of promotion.
Ref: M2108

IBM COBOL ANALYST/PROGRAMMERS

ESSEX **£7,000-£10,000**

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Ref: M2109

IBM COBOL PROGRAMMER

CITY **to £9,000 + MORTGAGE**

This financial organisation is seeking an IBM COBOL Programmer with 12 months' + experience to work on development with some maintenance. The company retains an IBM 4341 utilising DOS VSE, VSAM and VM/CMS. Excellent opportunity to gain experience of financial applications. Prospects are superb; benefits include MORTGAGE subs., low interest loans, h/c pension and STL.
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2000

(5661)

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We have just moved to prestigious new offices in Stanmore and need the following people to help us grow even faster.

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Providing day to day support for mainframe systems software products. Candidates should have at least 18 months' IBM experience with a sound working knowledge of MVS or DOS/VSE, a high level language, database management system and TP monitor.

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Cullinet House,
The Broadway, Stanmore, Middx. HA7 4DU
Telephone: 01-954 7333

Cullinet

CONTRACTS

Position	Location	No. Months
Analyst Programmer VME/IDMS/TPMS/COBOL	Central London	6-24
VM/CMS Systems Programmer	Surrey	6+
Cobol Programmer IMS/DB/DC	Central London	6+
Cobol Analyst Programmers IMS/DB/DC	South London	6+
Cobol Programmers IMS/DB	West London	3+
Honeywell Programmers DPSS	West London	6
Fortran Analyst Programmer Degree IBM	Central London	6
Univac 1100 Cobol Programmer JSP	West Country	6+
Senior Designers VME B IDMS TPMS	Herts	6+
Analyst Programmers VME B IDMS TPMS Cobol	Herts	6+
Cobol Programmers ME2900	Herts	6+
Support Consultants/Progs 2900 DBS	Middlesex	12
Programmer Tandem TAL	Middlesex	12
Designers IDMS/X TPMS 2900	N. Midlands	3
Senior Programmers Cobol IDMS X VME	Berks	6
Cobol Programmer ME2900	South Coast	2+
Cobol Programmer B6900 GEMCOS Cobol	North London	3+
Cobol Programmers 2900 VME B		6+
Burroughs Cobol Programmer DMS/CANDE	Surrey	6+
Analyst Programmers IBM Cobol MSA	South London	6
Programmers DPPX	South London	6+
Coral Programmers	South Coast	4-6
Pascal Programmers (Real Time)	Slough	6
RPG III Programmers	London/Sussex	3-6
DEC Systems Engineer RSX/VMS	South London	6-12
PL1/Assembler Programmer TSO SPF	Herts	6+
Designers Real Time Minis	West Country	6+
INTEL 886 Programmer Assembler/PLM	West Country	3
ICL 625 Assembler/Programmer	Kent Sussex	6+
Analysts ICL	Central London	6-24
Analysts IDMS/VME	Central London	6-24
PL1 IMS DB/DC	Central London	6
Digico Assembler	Herts	18
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Cobol CICS Programmers	London	6+
DLI Designers	S. Coast	6+
HP 3000 Programmers	Berks.	6+
PL/DLI Programmers	London	3-6
Burroughs Cobol Programmers	Various	6+
CICS/DLI Analysts	London	6+
Telecom hardware engineers	S. Coast	3-6

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Systems Programming

for YOUNG GRADUATES

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JBA

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Applications are invited from professional Programmers who have a minimum of three years experience within a real-time environment.
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For further details contact: Margaret Stevens

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LOCATION: KENT COAST **JA327/1**

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LOCATION: HOME/SOUTHERN COUNTIES JA327/2

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PROGRAMMER/ ANALYST

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LOCATION: BERKSHIRE **JA327/3**

PERKIN ELMER

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Our client is a new software house, which is part of a group that may be fairly described as a "household name." The company will be providing a wide range of solutions to business problems, including consultancy services, bespoke software, applications packages and hardware (both mini-and-micro computers) within specific vertical markets. It is intended that these markets should be Property Management, Commodity Broking and Export Shipping.

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Applicants should have a minimum of 2 years Systems Analysis experience in an IBM installation and part of their career should have been spent as a Programmer. Communication skills are necessary to maintain high level of user liaison.

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We are looking for a person with at least 18 months PL/1 programming experience using Structured Programming techniques. The successful applicants will join existing teams who are expanding to cope with greater DP commitment.

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PROJECT LEADERS — **CITY** — **Neg £14,000**
Our client, a major Software House, requires two Project Leaders to manage teams servicing their international client base. Ideally applicants will have financial, preferably Banking systems backgrounds and already have some supervisory experience. The positions attract an excellent Benefits package including good Bonus schemes and the early possibility of a company car.

PROGRAMMERS — **ESSEX** — **£8 to £11,000**
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PROGRAMMER — **LONDON** — **£7,000**
London-based site require a Programmer with one year's commercial RPGII. The hardware is WANG but any hardware will be considered. Applicants should have the standard accounting knowledge (General, Purchase and Sales Ledger) and any manufacturing systems would be of special interest. This site will offer rapid progression into analysis.

Apex Computer Recruitment Ltd. (5564)

404 4821

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London Office: 59 Grays Inn Road, London WC1X 8TL. Tel: 01-404 4821.
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ANALYST/PROGRAMMERS — **HOME COUNTIES** — **to £9,500**
Software house based North of London are seeking Programmers and Analyst/Programmers to work on a variety of new developments on both HP250 and HP3000 systems. Applicants should have a minimum of 18 months' experience of either system using COBOL or BASIC. Excellent career prospects with the opportunity to work also on micros.

PROGRAMMERS — **LONDON** — **c.£9,000**
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We are currently recruiting Programmers for a number of HP users based in Berkshire. Applicants should have a minimum of one year's COBOL preferably gained in an HP environment, however training will be provided where necessary. A variety of perks are offered including all usual large company benefits.

ANALYST/PROGRAMMER — **LONDON** — **c.£8,500**
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5443

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COMPUTER SCIENTIST

to collaborate with a team developing hardware for a data acquisition system for area detectors to be used among other applications for protein crystallography. He will be responsible for all software aspects of the project. Applicants should have a PhD in computing science and experience in operating systems, high level programming languages and compiler design for dialogue languages and/or pattern recognition.

An above average salary will be offered to the successful candidate. Certain allowances are payable in addition depending on personal circumstances. An initial contract of 3 years' duration which can be renewed, will be offered.

Please write briefly for an application form quoting reference nº 83/31 to:

EMBL, Personnel Section, Postfach
10.2209 D 6900 HEIDELBERG (5484)

COMPUTER CONTROLLER

A commercial group comprising several companies based in Sevenoaks, Kent, is seeking an individual to take control of their computer division. The group currently operates an NCR 9020, 256k memory and 54mb disc drive. Applicants who are experienced computer programmers with operational and systems background, currently earning not less than £8,000 p.a., should apply in writing with c.v. to:

Mr. R. W. B. Morton
Harris and Dixon Ltd
Wimbourne House, 136 High Street, Sevenoaks

HERTFORDSHIRE

Analysts and Designers to £15,500

Cobol Analyst/Programmers to £13,500

Senior Programmers to £13,500

You're busy! Why should you be interested?

If you are good at what you do, you are appreciated where you are and will only move for the right opportunity. At Sector we appreciate that. We have many years of experience in Computing, Recruitment and Career Development, and always ensure that your requirements are fully understood.

Our client does have an attractive and impressive story to tell –

✻ Latest technology, continuing investment
A multi-million £ retail company with outstanding profit growth, they intend to stay ahead by investing over £100m next year and pursuing a policy of continuing excellence in quality. The current Information System represents an investment of £6m in IBM, IMS Database, Structured Analysis and Design, Personal Computing, etc.

✻ Continuing training
It is recognised that the continued development of skills is crucial and therefore there is an "in house" training section whose professional staff are supported by outside consultants and training organisations when specialist skills are required.

✻ Career opportunities
A large department – but not a "Chinese Army." Working in small teams you are always involved but would probably never need to move again to progress. With a policy of internal promotion there is minimal staff turnover and regular appraisals ensure that you have the opportunity to express your views on appropriate progression.

✻ IBM skills not a prerequisite
They are flexible and recognise you are an individual – not a stereotype – and whilst an IBM background is helpful (Cobol, Assembler, IMS and ADF in particular), if you have outstanding skills on other equipment, IBM training will be given.

✻ Relocation to Hertfordshire
A pleasant location, a modern building with a purpose-designed working environment. To help you move they have a comprehensive relocation package, supported by a range of excellent company benefits.

For full details phone Evan Bond on 01-405 6322 during office hours and 0285 67710 between 8.00pm – 10.00pm (reverse charges). Subsequent interviews will be arranged at the following locations:–

Manchester Birmingham London Edinburgh Leeds

(5697)

Sector Personnel — COMPUTER RECRUITMENT AND CONSULTANCY

High Holborn House 52/54 High Holborn London WC1V 6RL. Telephone: 01-405 6322

'We have your business in mind'

UCL is expanding . . .

Universal Computers Limited – sole UK distributor of ULTIMATE computers (all of which use the famous PICK Operating System) is growing . . . fast. So it needs more sales and support staff to meet the increased demand for existing and new products, including a powerful new super micro (also running PICK) competing with many mini systems.

UCL turnover will exceed £4 million this year – a 40% expansion over 1982. Nevertheless UCL retains the small company atmosphere, so much appreciated by so many computer professionals, and offers real career development.

UCL requires NOW

- ★ **Senior Sales Managers** – earnings c£30,000
- ★ **Sales Persons** – on quota earnings £24,000
- ★ **Technical Support Engineers** – up to £12,000
- ★ **Applications Support People** – up to £10,000

for its Head Office and new West London premises.

Company Cars will be provided, and the UCL package includes both Pension and Private Health Schemes.

Contact Nick Drescher or Chris Holman – right now!

UCL
UNIVERSAL COMPUTERS LIMITED
23 PARADISE STREET SE16 4QD. Tel: 01-232 1155 (5675)

The IBM SYSTEM 34/36/38 Recruitment Specialists

IBM System/34 PROGRAMMER To £11,500 + Benefits + System/38 Training in 1984 Berks

We are an international pharmaceutical company making major contributions in the fields of medicine and health care. We have expanded in recent years into new areas of research and development, using to advantage our expertise in medicinal care. Our worldwide annual turnover reached almost one billion dollars last year reflecting our growth and operating success.

As an experienced programmer you will help develop and maintain existing programs and especially important will be your involvement with supporting MAAPICS. Every opportunity will be given for you to liaise with users and develop your analysis experience. You will be contributing to our future success and as a member of a team playing a vital role within the company.

1984 sees the installation of a System/38 and full support and training will be given to help you become an experienced and seasoned professional. You will need to be self motivated and able to work without supervision. Leadership qualities would be an advantage as opportunity for progression is excellent.

Please telephone for an early informal Discussion our Advising Consultant, Richard Milsum, on 01-354 1055 during office hours or on 01-958 2553 in the evenings or weekends. Alternatively please send full details to him at:

MARCH COMPUTER RECRUITMENT — 1 NOEL ROAD, LONDON N1 8HQ — 01-354 1055

NEW MIDDLESEX-BASED COMPUTER CENTRE

IBM 3083 – MVS/JES2, TSO/SPF, CICS and IDMS

Our client is a major international organisation operating in the Financial Information Services sector of the market on a worldwide basis, and is currently setting up a new centralised European computer centre. Decisions have been taken to develop a wide range of financial services for UK and European customers which involves the design and implementation of large DATABASE systems using IDMS and CICS as a TP monitor.

Immediate requirements are to recruit a number of key D.P. Professionals which will provide them with the scope and opportunity to make a significant contribution to the development of new major batch and online/realtime projects. Excellent career progression will be afforded to those D.P. Professionals who can demonstrate their skills and contribute towards these ambitious development plans.

PROJECT LEADERS c.£15,000+
Applicants must be able to demonstrate a sound technical track record of design and implementation of large-scale batch and online database applications, with experience of IDMS or other database experience. A working knowledge of command level CICS is essential for one of the positions preferably gained in an OS/MVS/JES database environment. A knowledge of BAL would be an advantage, but not essential. Project Leaders are responsible for functioning systems and associated documentation.

DATABASE ANALYST c.£14,000+
This position will suit someone with a sound knowledge of IDMS (IBM or ICL), together with a working knowledge of COBOL. The successful applicant, who will be responsible to the Database Administrator, must be able to communicate effectively at Project Manager level, and make database design decisions. Additional functions would eventually include responsibilities for staff at junior level

ANALYST/PROGRAMMERS c.£13,000+
Applicants must have sound experience of IBM COBOL, together with a working knowledge of JCL preferably gained in a large-scale online database environment using OS/MVS. Exposure to analysis at design and specification level is essential. A knowledge of BAL would be an advantage, but not essential. Training in CICS will be given where required.

PROGRAMMERS c.£12,000+
A minimum of 2-3 years IBM COBOL and/or BAL is needed, together with a working knowledge of JCL preferably gained in an OS/MVS environment. Training in CICS will be given where required.

OPERATIONS MANAGER to £20,000+car
This position will suit someone with extensive DP expertise, together with a proven technical and managerial track record. The successful applicant will take a leading role in the pre-installation and running of this new Computer Centre.

If you are attracted to the challenge of these ambitious development plans, which provide the scope and opportunity for excellent career progression and generous benefits package, call IAN C. BUICK, MBCS, Managing Director.

BUICK COMPUTER SERVICES
RECRUITMENT DIVISION
72 Rochester Row
Victoria · London SW1P 1JU

Tel: 01-834 0061 (24-hours)
Or call evenings and weekends
01-942 1178

SYSTEMS SOFTWARE SUPPORT UK/ABROAD £20,000++
This international Software House needs highly motivated D.P. professionals for exciting new customer support projects at home and abroad. Applicants must have 3 years' systems programming experience with a sound technical background of MVS/JES, CICS and other associated IBM software. The company is offering an excellent remuneration package together with outstanding career progression. Ref: A960

IBM PROGRAMMERS to PROJECT LEADERS HERTS/MIDDX to £19,000
Two major commercial companies require all levels of staff to Project Leaders to meet their expanding development commitments. Sound technical IBM mainframe knowledge, plus ability to plan and control work for small groups of professionals essential. Applicants must have a minimum of 2-4 years COBOL and/or BAL with a preferred working knowledge of IMS or IDMS in an OS/MVS environment. Ref: C769

PROJECT MANAGER LONDON £18,000+Profit Share
A leading Software House needs someone with a sound knowledge of telecommunications and/or defence systems, preferably gained within a Software House environment. The successful candidate will take control of the design and implementation of large telecommunication projects. BUPA, Life Assurance and Profit Share are just some of the attractive benefits offered. Ref: D462

ANALYST/PROGRAMMERS to £18,000
SENIOR PROGRAMMERS/SENIOR ANALYSTS
Major Software House based in London are seeking a number of D.P. professionals to cope with their expanding needs in their Banking, Insurance & Property Investment Divisions. Applicants should possess relevant applications experience together with a working knowledge IBM COBOL or RPG2. Experience of CICS/DL1 would be an advantage to those with a mainframe background. Rapid advancement opportunities exist in a continuing growth market. Ref: C932.

PROJECT MANAGER £16,000+Car+Bonus
Well-known Software House, situated in Middx, need a Project Manager with sound commercial systems and project management experience to manage turnkey systems, using MINIS/MICROS eg HP, DG, DEC equipment. The applicant will ideally have had exposure to a software house environment. Ref: C749

PROGRAMMERS & ANALYSTS to £16,000+benefits
A large number of our clients situated in London, Home/Southern Counties need Programmers & Analysts with PL1 or COBOL or BAL experience to develop realtime commercial systems, including Banking & Insurance, using CICS & DL1. Knowledge of CICS or SHADOW an advantage. Benefits include BONUS schemes, MORTGAGE & insurance facilities. Ref: C886

PROJECT LEADERS MIDDX c.£15,000+Bonus
Major financial organisation requires Project Leaders with sound experience in the design and implementation of large scale database systems, with a working knowledge of either command level CICS or IDMS, preferably in a MVS environment. A knowledge of BAL would be useful, but not essential. Excellent career prospects and benefits apply to these key positions. Ref: C944

SYSTEMS ANALYST LONDON £15,000+
This international company needs an Analyst with up to 4 years experience in the securities industry, ie Banking or Insurance Broking, etc. An IBM background would be preferred. Very good prospects and benefits apply to this position. Ref: C880

D.B. ANALYST X 2 MIDDX/LONDON to £15,000+
Two large financial organisations require Database Analysts with a sound knowledge of IDMS and COBOL (CL or IBM background – Middx), or IMS and PL1, CICS (London). Positions would ideally suit a Senior Analyst-Programmer, or Analyst. Excellent career prospects and benefits apply Ref: C898

SYSTEMS PROGRAMMERS LONDON to £15,000
Large international company needs someone with 3 years' experience in an IBM 4300 DOS/VSE environment. Knowledge of CICS an advantage. Successful applicant would be given opportunity to travel to USA and Europe on special projects. Ref: C663

CHIEF PROGRAMMER W. MIDDX £14,000+
Supervisory skills to lead a team of six Programmers together with in depth working knowledge of CICS/DL1 and COBOL are required for this leading manufacturing organisation. Excellent salary and company benefits apply. Ref: B835

GSD ANALYST/PROGRAMMERS SURREY c.£14,000
This large Software House needs 2 Analyst/Programmers with sound experience of RPG2 or RPG3 to work on a wide variety of commercial applications. A knowledge of MAAPICS would be an advantage. Prospects for career advancement are extremely good for those looking for a challenge Ref: C833

ANALYST/PROGRAMMERS BERKS to £14,500+Relocation
This well-known commercial company requires 2 Analyst/Programmers with 2 years' data processing experience. Candidates must have reached degree level standard of education. Full training will be given on the IBM 8032/4331. Knowledge of COBOL and/or PL1 an advantage. Excellent fringe benefits include relocation package where necessary. Ref: D317

BUSINESS ANALYST/DESIGNER £14,000+Profit Share
Large financial organisation based in London, needs someone to take responsibility for developing design and information systems for their corporate finance and trading departments. The successful applicant must have merchant banking or financial systems background, preferably gained within a MINI/COMPUTER environment. Experience of DEC systems would be an advantage Ref: C709

BUSINESS ANALYSTS MIDDX c.£14,000
Expanding Software organisation needs Business Analysts with commercial applications experience and sound MINI background eg HP, DG, DEC, etc. This position would ideally suit someone wishing to gain plenty of client involvement and exposure to a wide variety of application areas. Ref: C768

RPG3 PROGRAMMERS/ANALYSTS MIDDX c.£14,000
Ideally the right applicant will have at least 18 months' experience of RPG3 to work on various projects within the Software House environment of a leading commercial organisation. Ref: B869

ANALYST/PROGRAMMERS MIDDX/LONDON £13,000+Bonus
Two large financial companies need Analyst/Programmers with a minimum of 2 years IBM COBOL, preferably gained in a database environment using MVS, to take leading roles in their development plans. A knowledge of BAL would be useful, but not essential. Vacancies also exists for BAL Programmers. Excellent career path and benefits apply. Ref: C943

SYSTEMS ENGINEER KENT c.£13,000+Relocation
2 years' FORTRAN and MACRO 11 experience is required by this international engineering company for their software development team. The ideal applicant will have a professional qualification together with in-depth experience of CAD, systems configuration and customer liaison. Excellent fringe benefits and working conditions apply. Ref: A708

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72 Rochester Row
Victoria · London SW1P 1JU

Tel: 01-834 0061 (24-hours)
Or call evenings and weekends
Ref. A: 01-318 2700
REF. B: 01-794 6937
REF. C: 01-842 1178
REF. D: 01-310 0482

The above vacancies are only a token selection taken from our current files, and we are always pleased to hear from computer professionals wishing to further their career objectives

SYSTEMS ANALYST LONDON to £13,000
Large financial organisation requires someone with 3 years' analysis experience preferably gained in an IBM MVS/JES 2 environment. The successful applicant must have taken at least 1 project from feasibility through to implementation, and will work on a variety of new commercial applications. Excellent fringe benefits apply Ref: D420

PROGRAMMERS, ANALYST/PROGRAMMERS LONDON to £13,000+Bonus
A number of our clients require people with a minimum of 2 years' COBOL to help develop a variety of real-time applications. Applicants with backgrounds of general commercial, insurance and financial expertise would be considered for these numerous ICL positions. A knowledge of IDMS, TPS or TPMS would be advantageous though training will be given. MORTGAGE, LIFE ASSURANCE, SEASON-TICKET LOANS, BUPA and BONUSES are just some of the fringe benefits offered. Ref: A/GEN

COBOL/CICS PROGRAMMERS LONDON to £13,000
Large Software/Bureau organisation needs 2 IBM COBOL Programmers to meet their expanding client requirements. Knowledge of CICS/DL1 is preferred, but training will be considered. The company offers an excellent career path through to systems/consultancy level. Ref: C970

SYSTEMS ANALYST HERTS £12,500+Relocation
A minimum of 2 years' VME/B experience is required by this international retail organisation. The successful applicant will take responsibility for the development and implementation of new commercial applications. A good understanding of installation standards and operating systems software would be an advantage. Ref: D883

SYSTEMS ANALYST MIDDX £12,000+Bonus
A D.P. professional with a proven record of systems implementation is required by this expanding manufacturing organisation. The successful applicant will be assigned to the development of exciting new commercial projects, on an ME29 under TME. XMAS BONUS and PETROL ALLOWANCE are just two of the many attractive benefits offered. Ref: D878

SYSTEMS ANALYST LONDON £12,000+Mortgage
Leading financial organisation needs someone with a proven record of systems/implementation using 2R-BATS 'MONITOR' software. The successful candidate will be assigned to a highly professional team, currently developing major financial systems. MORTGAGE and BUPA are just two of the many benefits offered. Ref: A843

IBM PROGRAMMERS MIDDX/LONDON £12,000+Bonus
This international organisation needs Programmers with a minimum of 2 years IBM COBOL and/or BAL, to develop large on-line financial applications in an MVS/IDMS environment. Knowledge of CICS useful, but training will be given. Excellent career prospects and benefits apply. Ref: C942.

DEC PROGRAMMERS LONDON c.£12,000
Our client, a leading Software Organisation, needs DEC Programmers to perform Customer Support roles within the UK and abroad. Applications include banking and other financial applications packages together with communications software and hardware support. Applicants must have COBOL, BASIC (+), or AIMS, together with good communicative skills, and be prepared for occasional worldwide travel. Experience of DEC VMS, RSX 11 or RSTS/E would be an advantage. Excellent training facilities and opportunities for advancement in a fast-growing market. Ref: C924

ANALYST/PROGRAMMERS ESSEX c.£12,000
Our clients, a leading manufacturing organisation, require Analyst/Programmers with at least 2 years' IBM COBOL expertise, together with CICS/DL1, to meet their demand for major new online development work. Excellent salary, benefits and career advancement guaranteed. Ref: B866.

PROGRAMMERS/ANALYST MIDDX to £12,000
Large Software Organisation needs someone with 2 years RPG 2 or RPG 3, together with some analysis experience. The successful applicant will gain considerable experience in handling a wide variety of applications, training facilities exist, with prospects for rapid advancement in a fast growth market. Ref: C928

ANALYST/PROGRAMMERS MIDDX to £12,000
This large engineering organisation is seeking 2 PL1 and/or COBOL Programmers to join their expanding team to work in a variety of financial applications. Experience in an MVS environment and knowledge of CICS or VTAM would be a definite advantage. Structured career path guaranteed. Ref: D227

PROGRAMMERS, ANALYST PROGRAMMERS (TRAIN IN RPG3) £11,500+Relocation
A number of our clients situated in London, Home/Southern Counties require people with a minimum of 12 months' RPG2 experience to train on IBM SYSTEM 38/RPG 3. Applicants with backgrounds of general commercial and manufacturing expertise would be considered for these numerous positions. LIFE ASSURANCE, BUPA and RELOCATION expenses are just some of the many fringe benefits offered. Ref: A868

PROGRAMMERS/ANALYST LONDON £11,500+Bonus
Large financial company organisation needs someone with 2 years' COBOL experience to work with their development teams in an MVS/JES2 environment. A knowledge of PL1 would be useful. Benefits include BONUS scheme, FREE LUNCHES, STL, FREE LIFE ASSURANCE, etc. Ref: C860

PASCAL PROGRAMMER LONDON to £11,500
A well-known telecommunications organisation require someone with 2 years' PASCAL experience preferably gained on DEC/VAX equipment. The successful candidate will be involved in the development of new and enhancement of existing GRAPHICS systems. Excellent career prospects. Ref: D704

PROGRAMMER MIDDX £11,000+Bonus
A leading manufacturing organisation seeks someone with at least 3 years' IBM COBOL experience together with a working knowledge of VSAM to work on major new online development systems. Excellent benefits are offered which includes a substantial BONUS. Ref: B348

IBM COBOL PROGRAMMERS MIDLANDS £11,000+Relocation
A leading Software House, currently developing new online systems, need D.P. professionals with 2 years COBOL for their IBM DOS/VSE installation. A knowledge of CICS/DL1 would be an advantage. The company are offering a stimulating working environment, together with a full remuneration package including RELOCATION. Ref: A849

FORTRAN SPECIALISTS LONDON/HOME COUNTIES c.£11,000
Programmers are required to join existing development teams to work on a wide variety of applications including scientific, research, engineering and commercial projects using minis and mainframes, including DEC, HP, DG, etc. Knowledge of UNIX or STATUS would be useful for a site in Middx. Ref: C780

COBOL PROGRAMMERS (ANY MAINFRAME) SURREY c.£11,000
Leading manufacturing organisation requires D.P. professionals with a minimum of 2 years' COBOL experience for their IBM 4341 DOS/VSE/CICS installation. Successful applicants will be assigned to the development of major online commercial applications. A structured career path and excellent benefits package are offered. Ref: A877

FORTRAN PROGRAMMER HANTS £10,500+Relocation
A leading company in the field of scientific research need someone with a minimum of 2 years FORTRAN, preferably gained on HEWLETT PACKARD equipment. The successful applicant will be required to assist with planning and researching of major development project. A structured career together with many fringe benefits apply. Ref: D887

NCR COBOL PROGRAMMERS SURREY c.£10,500
Expanding manufacturing organisation requires Programmers with a minimum of 2 years' COBOL experience preferably gained within an NCR/VRX environment. Successful applicants will be assigned to a major development project using online and DATABASE techniques. Many fringe benefits apply Ref: A893

PROGRAMMERS NORTH SURREY £10,000+
A leading financial organisation needs IBM COBOL Programmers for major new online development work. A working knowledge of CICS is also essential, as is the ability to liaise with Users. Very good prospects for the right people together with good benefits Ref: B836

ICL PROGRAMMERS MIDDX £9,500+
A minimum of 18 months' COBOL experience is required by this leading organisation. Online expertise is preferred, as is the ability to liaise with Users. A well structured career path in ANALYSIS is guaranteed Ref: B838

WANG PROGRAMMER LONDON to £9,500
A leading name in the field of communications needs a self-motivated person with a minimum of 12 months' RPG2 experience gained on WANG equipment. The successful candidate will assist with the development of new commercial applications, where every opportunity to progress into analysis will be given. A structured career path together with excellent working conditions are offered Ref. A945

JUNIOR IBM PROGRAMMER SUSSEX c.£8,000+Mortgage
This leading finance company needs someone with 12 months' commercial COBOL experience for their expanding MIS department. The successful candidate will join an existing project team currently developing new financial applications on an IBM 4341, where training in CICS/DL1 will be given. PREFERENTIAL LOANS and MORTGAGE are just two of the many fringe benefits. Ref: A767

OPERATIONS

OPERATIONS MANAGER MIDDX to £20,000+car
Our client, a large financial organisation, needs an Operations Manager to take responsibility for the setting up and running of a new IBM 3083 site, running under MVS/JES, TSO/SPF, CICS and IDMS. The successful candidate will have extensive DP expertise with proven technical and managerial experience. Excellent career prospects and benefits apply. Ref: C969

PRODUCTION CONTROL MANAGER MIDDX to £20,000+car
Our client, a large financial organisation needs a Production Control Manager to take responsibility for all aspects of Operations Production functions for a new IBM 3083 site, running under MVS/JES, TSO/SPF, CICS and IDMS. The successful candidate will have proven management and technical skills, and be capable of handling the diverse operational requirements of this large new site. Excellent career prospects and benefits apply. Ref: C1008

SYSTEMS PROGRAMMER (EX-IBM OPERATIONS) LONDON to £13,000
Our client, a large financial organisation is seeking an Operations Analyst or Operations Supervisor wishing to move into the realms of systems programming. The successful applicant must have sound IBM DOS/VSE JCL experience, together with experience of installing packages. A limited knowledge of PLI or BAL would obviously be a distinct advantage, together with exposure to CICS. Ref: C969

MVS OPERATORS SOUTH COAST c.£9,000
A leading international organisation require people with a minimum of 18 months' MVS/JES2 experience for their expanding communications department. Training in CICS/DL1 given. Numerous attractive benefits include FREE LIFE ASSURANCE. Ref: A1004

JUNIOR OPERATIONS ANALYST SURREY £9,000+
International manufacturing organisation needs someone with 2 years' MVS/JES2 and JCL experience, looking to progress into management. A structured career path together with excellent benefits guaranteed. Ref: A692

HP3000 SHIFT LEADERS BERKS/KENT to £9,000
Self-motivated persons with a minimum of 2 years HP3000 is required by two major manufacturing organisations. Previous supervisory experience is preferred. Excellent benefits and career prospects apply. Ref: D874

MVS OPERATOR LONDON £8,600+
Large insurance company needs an Operator with 2 years' MVS/JES2 experience. Excellent prospects and fringe benefits apply. Ref: C956

DOS OPERATORS SURREY/LONDON/BERKS to £8,300+Mortgage
Two financial organisations and a Manufacturing Company need Operators with 1-2 years' experience with DOS/VSE to work in a 2/3-SHIFT environment. Knowledge of CICS or VM useful. Excellent prospects and company benefits. Ref: C957

IBM CO-ORDINATOR SURREY c.£8,000
This days-only position would suit an experienced Operator with DOS/VSE, CICS experience to assume responsibilities of problem solving, trouble-shooting, liaising with Users, etc. Excellent working conditions apply. Ref: B834

IBM OPERATORS LONDON/ESSEX £6,000-£8,000
We have been retained by several organisations to recruit Operations Personnel with 12 months' + experience of DOS/VSE or OS/MVS. Varied benefits include MORTGAGE facilities, Free Life Assurance, BUPA, etc. Ref: B/GEN

DATA CONTROL CLERKS (ANY MAINFRAME) LONDON c.£7,000
A leading financial organisation require experienced Data Controllers for their expanding division. Excellent working conditions and benefits apply, including MORTGAGE facilities. Ref: B668

TAPE LIBRARIAN SURREY c.£6,500
Our client requires someone to assume the role of being responsible for the maintenance of the Tape Library together with the usual job functions. Excellent working conditions and benefit apply. Ref: B871

GSD OPERATORS LONDON £6,500+
This well-known company needs 2 Operators to work on their IBM System/34 and System/38 equipment. The ability to communicate with Users essential. Excellent career path and benefits apply. Ref: C939

GSD OPERATOR (DAYS ONLY) SURREY £6,500
2 years' System/34 experience is required by this expanding Commercial Organisation. Excellent prospects and fringe benefits. Ref: A941

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72 Rochester Row
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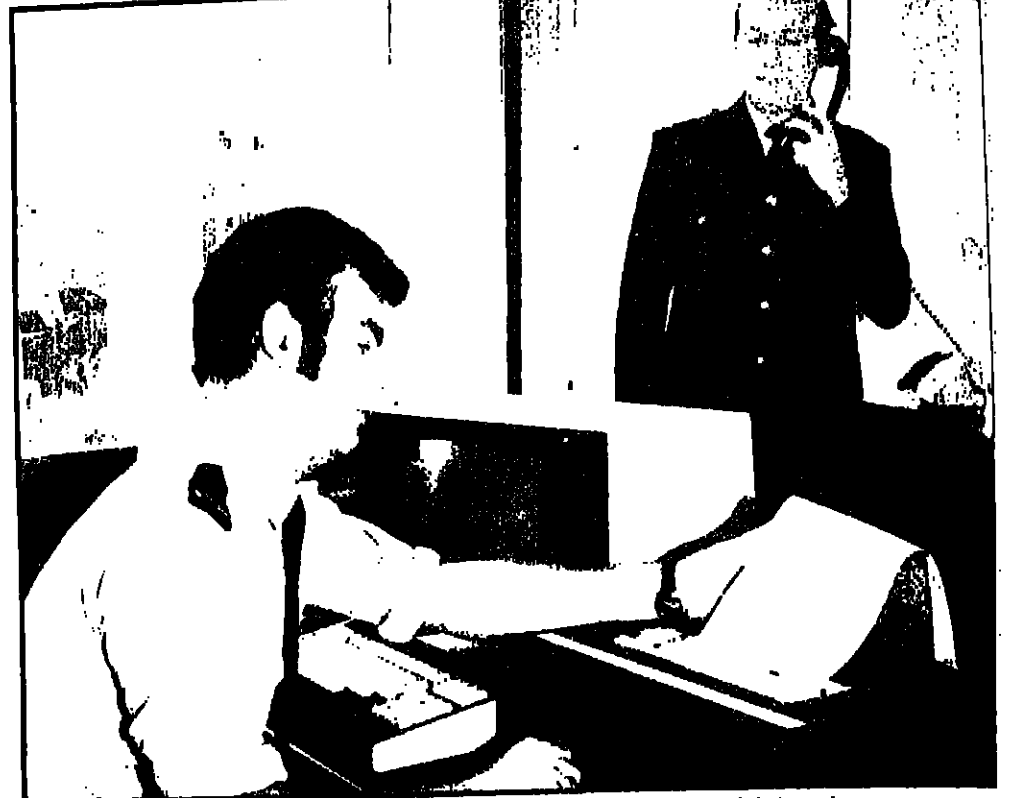
REF. B: 01-794 6937
REF. C: 01-842 1178
REF. D: 01-310 0482

The above vacancies are only a token selection taken from our current files, and we are always pleased to hear from computer professionals wishing to further their career objectives (5845)

JOBS IN THE PUBLIC SECTOR

The advantages of going public

John Riley looks at a sector of computing that offers staff a chance to grow with a wide range of machines



Police forces throughout the country increasingly are turning to computers to speed their work.

THE public sector encompasses a wide range of activities – local government, the Civil Service, universities, and hospitals and health services as well as services including the police, fire brigades, and so on. True, they seldom provide the salaries and physical perks of working in a commercial environment, but there are varied and unique advantages that the public sector has been slow to push to the forefront of its recruiting campaigns.

There are certainly long-term opportunities. Computerisation is taking place in the public sector at an increasing rate, particularly within local government and the Civil Service. An indication of the amount of investment is provided from local authorities which are estimated to spend about £200 million on computing each year. The Civil Service is mounting a massive 10-year computerisation programme for the Department of Health and Social Security, which will provide many opportunities – and that programme is about three years behind the project to computerise the Inland Revenue.

All public sector employers offer opportunities to grow with a wide range of machines, with lateral movement to other systems, relatively relaxed working conditions, and less time-pressure to develop systems. Employees from across the public sector speak of the satisfaction of doing a worthwhile job for the community rather than being involved in the more stressful rough and tumble of the commercial world.

A closer look at one of the largest public sector employers, the Greater London Council, illustrates the opportunities within DP departments throughout the public sector.

Ken Dalby, head of GLC Computing Services, which has about 260 DP staff, spelled out the benefits of working within local government, which are also to be found throughout the public sector.

"With local government there is a tremendous range of applications areas", he said. "Other organisations such as banks or construction companies can't offer the same breadth of applications."

The applications range from government through to commercial and financial functions, offering employees a wide variety of experience in system development.

Not only is there a wide range of applications, but a wide range of equipment of different sizes and makes in most public sector installations; and there can be opportunities to develop in different DP environments under the same employer.

"In the GLC we pride ourselves on our wide array of equipment", said Dalby. The GLC has IBM 3081 and 3033 mainframes, Prime, ABS and Digital Equipment minicomputers, and about 300 microcomputers covering a wide range of manufacturers, and a network of 600 terminals.

"There are opportunities to move from one DP environment to another without changing employer", continues Dalby, "so with us there is the chance to move from the central service to working in a smaller department computer group co-ordinating computer activities.

"Also, if an employee ever gets fed up with computing, there are plenty of opportunities for moving across into general administration, so we are able to offer broader career prospects and our staff are not restricted within the one profession", observed Dalby.

There are opportunities to move from one DP department to another without changing employer. And if an employee ever gets fed up with computing, there are plenty of opportunities of moving across into general administration

Dalby and other local government computer managers agree that there are perks available in the commercial world that local government does not offer, such as company cars, free lunches, profit sharing schemes, etc, but point out that holidays are more generous – typically about five weeks a year and flexitime working.

"In any case, profit sharing only works as long as the company is making money", observed one computer manager.

Some local authorities develop sophisticated software systems which they market successfully, giving scope for staff to develop their research interests. One such authority is Dorchester County Council's computer department which has produced a general purpose enquiry package to allow user department staff to obtain answers to complex enquiries on computer files immediately. The package is designed for use on ICL 2900 Series computers running the VME operating system.

Richard Goodridge, Dorchester County Council's computer manager, says that the package has sold widely to many organisations including Racal and the Ministry of Defence.

Computer managers of local government installations have their own user groups, and meet regularly to discuss developments in a co-operative atmosphere, and the benefits are passed down the line.

Dalby is chairman of the local government IBM user group which meets every two months providing a "natural source of interchange". ICL users have similar arrangements.

Are employees affected when local authorities move from central processors to distributed processing? Dalby says this is not so widespread. "Distributed processing is only fully effective when the organisation is physically distributed. Commercial organisations with branch offices spread over the country have a greater need to process data locally and transfer to the centre what is of corporate interest."

The public sector covers all areas of data processing and provides a good way round the [illegible] 22 of no experience-no job; nearly all areas offer entry training and continual advanced training.

Many public organisations rely on people from government-sponsored courses such as the [illegible] courses, and many of these have had no previous DP experience.

WEST SOMERSET DISTRICT COUNCIL
APPOINTMENT OF COMPUTER OPERATOR
SCALE 3/4 (£5,840-£7,008)
Applications are invited from suitably qualified persons for the above position in the Treasurer's Department at Minehead. Applicants should have extensive knowledge of ICL operating systems and utilities (preferably TME and CL) and be able to maintain reciprocal cover with Data Prep Supervisor (using DDE).
The commencing salary will be determined according to the ability and experience of the successful applicant. Five-day week. 20 working days' annual leave. Post superannuable. Assistance with housing accommodation in approved cases.
Application forms may be obtained from the Treasurer at the Council Offices, 37 Blenheim Road, Minehead, to whom all applications should be submitted by October 5, 1983.
H. CLOSE
Chief Executive Officer and Clerk
Council Offices, 20 Fore Street, Williton, Taunton TA4 4QA, Somerset
(6574)

SOUTH GLAMORGAN COUNTY COUNCIL
EDUCATION DEPARTMENT
COMPUTER RESOURCES ASSISTANT (ADMINISTRATIVE SYSTEMS)
Scale 4/5 £6,264-£7,896 p.a.
REF A6. Required by the South Glamorgan Institute of Higher Education in the Management Information and Resources Section which deals with all administrative computing applications in the Institute. Preferably candidates should be competent COBOL programmers with systems analysis skills or those wishing to move into analysis. The successful applicant must be capable of working with the minimum of supervision and have the ability to liaise with staff at all levels. The post offers a challenging and stimulating environment developing and maintaining management information systems on a PRIME 550. A knowledge of Further Education administration would be an advantage. The person appointed will operate mainly from the Cyncoed Centre, Cardiff but will have sufficient involvement with all four centres and the Computer Unit at Llandaff, Cardiff.
Requests for Job Description and application form, accompanied by a stamped addressed envelope, to the Personnel and Management Services Officer, Floor 9, County Headquarters, Newport Road, Cardiff. CLOSING DATE 28th SEPTEMBER, 1983. Please quote job reference.
(6499)

UNIVERSITY OF SALFORD
Department of Civil Engineering
SCIENTIFIC OFFICER
Applications are invited from suitably qualified persons with expertise in micro-computer hardware and software.
The successful applicant will be required to:
(a) Assist in the linking of laboratory experiments to computers including development of the necessary hardware and software;
(b) Collaborate with academic staff in the development of software for both undergraduate teaching and research applications.
Salary within the range £7,190-£11,615 p.a., depending on age, experience and qualifications, USS benefits. The post is available immediately.
Application form and further particulars from the Registrar, University of Salford, Salford M5 4WT (tel: 061-736 5843 ext. 215) to whom completed applications should be returned not later than 17 October 1983, quoting reference C/234/CW.
(5/781)

Teachers' Association [illegible] ton/King's Cross area [illegible] vacancy for a
PROGRAMMER/OPERATOR
in a small unit with the [illegible] phasis on programming [illegible] be experienced in COBOL programming preferably in a Burroughs environment [illegible] capable of working on own initiative.
The Association operates a B800 Computer principally [illegible] Membership records but new development work [illegible] visaged.
A broad-based enthusiastic outlook on all computer matters will be advantageous.
Salary (under review) [illegible] range £7,398 to £9,[illegible] annum gross. 32½-hour [illegible] good conditions of service [illegible] sion scheme, LVs, etc.
Application form and [illegible] details from Ms J. Page [illegible] phone 01-387 6806 extension [illegible]

Computer Staff
Scottish Transport Group
CHIEF ANALYSTS
SYSTEMS ANALYSTS
ANALYST PROGRAMMERS
Location: Scotland — Salaries: c £10,000
The Scottish Transport Group is responsible, through its subsidiaries, to the Secretary of State for Scotland for a major part of Scotland's passenger transport by both road and sea. The Group's major subsidiaries are the Scottish Bus Group (which comprises seven major bus companies) and Caledonian MacBrayne Limited.
As a Group we are now in the process of de-centralising our computer facilities to operating Companies; this will lead to exciting and innovative opportunities for qualified and enthusiastic staff at various levels of responsibility to oversee the transition and later be responsible for maintaining and developing individual Company's Data Processing requirements.
Locations for successful applicants will be throughout Scotland in Edinburgh, Kilmarnock, Falkirk, Motherwell, Kirkcaldy, Aberdeen, Inverness and Gourock; it would assist if applicants indicated their preferred location.
For the right applicants with the essential enthusiasm and experience we shall offer excellent salaries, benefits and prospects usually associated with a large organisation (over 10,000 employees), together with relocation expenses where necessary.
Applications in strict confidence should be submitted giving details of experience, salary, etc to:- A Douglas Esq, Manpower Executive, Scottish Transport Group, Carron House 114/116 George Street, EDINBURGH
(5809)

university college of swansea
Department of Electrical and Electronic Engineering
Applications are invited for the vacancy of
Lecturer
in the
Department of Electrical and Electronic Engineering.
Applicants should preferably have research interests in Computer aided Design of devices, circuits or systems.
The appointment, which will commence from the soonest date that can be arranged, will be on the scale £7190-£14125 per annum plus USS/USSPS benefits.
Further particulars and application forms (2 copies) may be obtained from the Personnel Office, University College of Swansea, Singleton Park, Swansea SA2 8PP, to which office they should be returned by Friday, October 7, 1983
(5533)

BOX NUMBERS
Box number replies should be addressed to:
Box Number ....
c/o Computer Weekly
Quadrant House
The Quadrant
Sutton, Surrey SM2 5AS

Bristol Polytechnic
COMPUTER CENTRE
OPERATIONS MANAGER
Ref. No: A/111
SALARY SCALE: £9,060-£9,660 per annum
Applications are invited for this vacant post from users having proven relevant experience.
A major enhancement programme is underway which will [illegible] a system based on a Prime 550, 2 Prime 850 and an ICL ME29 [illegible] which it is aimed to drive 180+ terminals on 6 major sites.
Reporting to the Computer Manager the successful candidate will be responsible for the operations function and will be expected to work closely with user departments.
Previous supervisory experience is necessary and knowledge of PRIME/ICL machines would be advantageous.
Informal enquiries to Mr O. Ruse, Computer Manager on Bristol 656261, Ext 335.
For further details and an application form, to be returned by [illegible] October, 1983, please contact the Personnel Office, Bristol Polytechnic, Coldharbour Lane, Frenchay, Bristol or ring Bristol 656261, ext 216 or 217.
Please quote Reference Number A/111 in all communications.

[, [illegible]]

PUBLIC SECTOR APPOINTMENTS

City of Salford
DATA PROCESSING
COMPUTING CONTROL ASSISTANT
(Scale 6//SO2) £8,154-10,539
COMPUTER CENTRE - SWINTON
Post Ref: 3013/CW
The Computing Control Section assists the Computer Operations Manager by the design and specification of computer operations procedures for existing, new and revised applications running on the City Council's computers of which the principal machine is, at present, an ICL 2966 running under VME/P.
Major development of new applications, based on IDMS and TPMS, is under way. Existing work embraces ICL 1900 batch and 2900 batch, TP & MAC.
The responsibilities include data security, scheduling work, recording and monitoring machine use, media selection and the provision of an effective computing service to City Council departments from an efficient use of computers, operating software and computer-based equipment.
The successful applicant will possess practical experience and knowledge of the operational aspects of the provision of a computing service.
Starting salary will depend on qualifications and experience.
Application forms may be obtained from the Personnel Manager, Salford Civic Centre, Swinton, Manchester M27 2BN. Telephone 061-793 3158. Please quote the appropriate post reference in all communications. Closing date for applications: October 7, 1983.
(5587)

CDVEC CITY OF DUBLIN VOCATIONAL EDUCATION COMMITTEE
Dublin Institute of Technology
College of Technology, Kevin Street, Dublin 8.
Lecturer in Computer Science
Applications are invited from suitably qualified persons for the above wholetime teaching post at Lecturer Scale I level.
MINIMUM QUALIFICATIONS:
(a) A first or second class honours degree of a recognised university in a relevant discipline or an equivalent qualification;
(b) At least three years approved postgraduate experience in third-level teaching and/or in the development and implementation of Computer Systems and/or Research.
Qualifications, salary and conditions of service as per Memo V.7 of the Department of Education.
SALARY:
IR£11,227 to IR£15,806 (Incremental credit up to a maximum of five years may be permitted in certain circumstances).
Applications on the standard form and further information available on request.
Completed application forms must reach the Secretary/Registrar not later than 12 noon on Tuesday, 1st November 1983.
(5573)
Chief Executive Officer: W J Arundel, B.Comm, H.Dip Ed

FARNBOROUGH COLLEGE OF TECHNOLOGY
LECTURER GRADE I IN COMPUTING
To teach in a range of courses up to HND level.
TEMPORARY LECTURER GRADE I IN COMPUTING/DATA PROCESSING
In a similar range of courses. Appointment to 31/8/84 in first instance.
Applicants should have good industrial/commercial experience and acceptable qualification. Salary range £5,649 to £9,735 p.a., starting point depending on experience and qualifications.
Further particulars from the staffing officer, Farnborough College of Technology, Boundary Road, Farnborough, Hants GU14 6SB (S.A.E. please).
Closing date: 7th October, 1983
(5579)

Coláiste na hOllscoile Corcaigh
University College Cork
PROJECT MANAGERS TO IR£17½K
The Computer Bureau requires senior staff for the implementation of major systems. Applications, in support of academic and administrative users involve use of Database Technology, Network Development and suport of diverse academic users.
D.P. staff with experience to Project Manager level in either commercial data processing or research environments are invited to apply.
Application forms, returnable by 4th October 1983, and job specification available from Establishment Officer, University College Cork, Ireland. (Tel: 021-26871 ext. 2674).
(5640)

UNIVERSITY OF EDINBURGH
Program Library Unit
COMPUTING OFFICER FOR DATABASE WORK
The Program Library Unit has a vacancy for a Computing Officer to work in the area of Project Support and Database Systems.
The Program Library Unit is a department of the University of Edinburgh responsible for providing a range of computing application related services to users in the University and in a number of Government funded research institutes around Edinburgh and elsewhere.
The work would be in two main areas (1) support to a variety of user projects and assistance in the evaluation of user requirements (2) the development and maintenance of ENUF (Edinburgh User Friendly database management system) software on EMAS and other systems.
Applications are invited from experienced graduates in computing or in a course with some computing content. The appointment will be on the scale: Computing Officer £7,190-£11,615 together with superannuation. The appointment will be for a period of 3 years in the first instance with a two-yearly review first occurring after one year to consider a two-year extension.
Further particulars are available from the Secretary to the University, Old College, South Bridge, Edinburgh EH8 9YL, with whom applications (4 copies), including curriculum vitae and the names of two referees, should be lodged not later than 14th October, 1983.
Please quote reference number 7036.
(5598)

CITY OF BIRMINGHAM POLYTECHNIC
Computer Centre
SENIOR LECTURER IN SYSTEMS ANALYSIS
(Re-advertisement)
The main task, initially, is that of developing a Management Information System for the Polytechnic's administration. Thereafter conventional lecturing duties will follow mainly on Business Computing courses.
SALARY SCALE:
SENIOR LECTURER
£10,683-£12,552 (bar)
£13,443 p.a.
Further details and application forms (to be returned by October 6, 1983) from: The Personnel Officer, City of Birmingham Polytechnic, F Block, Perry Barr, Birmingham B42 2SU. Telephone 021-356 9193, Ext. 215.
(5480)

FOR CLASSIFIED ADVERTISING USE DIRECT LINES
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(01) 661 8787
DIRECT ADVERTISERS
(01) 661 8080

Lancashire County Council
An Equal Opportunities employer
COUNTY TREASURER'S DEPARTMENT
SENIOR SYSTEMS PROGRAMMER (MICRO)
Salary within the Career range SO1/PO1 (1-7) – £9,060-£11,703
This is a new post and is one of three senior systems programmer posts within the Systems Support Section, which is headed by a Principal Systems Programmer. There are also separate Programming and System Analyst Sections. The duties will involve working closely with the Principal Systems Programmer and other senior members of staff in the identification and exploitation of modern technology to the benefit of the County Council. The Authority has a wide range of equipment including terminals, word processors etc and a strategy to link this equipment is being developed.
The computer installation, which will shortly be enhanced, presently consists of an ICL 2976 with 8 mb store, considerable fixed and exchangeable disc storage and communications facilities providing an RJE, MAC and TP service operating under VME(B). This machine also provides extensive facilities for nine District Councils and a Development Corporation.
The location is in Preston which has excellent road and rail links as well as being only one hour's drive from the Lake District and other areas of scenic and leisure attractions. There is available a scheme for the reimbursement of relocation expenses.
Applicants should have more than two years of practical experience in software support or modern technology micro equipment and be able to communicate with technical and user staff at all levels. Application forms are available from The County Treasurer, PO Box 100, County Hall, Preston, or by telephoning Anne Booth on Preston 264776.
Closing date: Friday, 30th September, 1983.
(5496)

PLYMOUTH POLYTECHNIC
Research, Consultancy, Teaching in the South West
DEPARTMENT OF ELECTRICAL & ELECTRONIC ENGINEERING
2 SENIOR LECTURERS/LECTURERS II
Salary: £7,215-£13,443
(level of appointment and starting salary dependent upon qualifications and experience)
5 SERC RESEARCH ASSISTANTS
Salary: up to £7,000
Required to join a lively multidisciplinary group embracing interests in computer hardware, software engineering, image understanding, vision and artificial intelligence forming part of a major new initiative in information engineering. The teaching and research in the Department, which is to include a new B.Eng. programme, strongly reflects these and other areas in the developing discipline of information engineering. Some of the Research and Consultancy activities will form part of a proposed industrial research institute linking the academic and industrial communities.
Applicants should have a Ph.D degree or equivalent research experience.
Lectureships in:
(i) Software Engineering
(ii) Digital Control Engineering
Research Assistantships in:
(i) VLSI Designs for Image Processing (2 posts)
(ii) Knowledge Based Software Design Tools (2 posts)
(iii) Active Tactile Sensor Arrays (1 post)
Application forms to be returned by Friday, October 14th, 1983 can be obtained with further particulars from the Personnel Officer, Plymouth Polytechnic.
(5620)
Drake Circus, Plymouth, Devon, PL4 8AA

SALES BIT

Quality of Management – 66

Take care with those discounts

I RECALL an occasion when one of my salesmen told me about a couple of situations that he thought were substantial sales victories. One was a sale signed sealed and delivered. The other a promise of increased business from an existing but small-volume user. Then came the bad news.

The salesman told me that for the new client he had been obliged to give a discount, even though he was not authorised to do so. His excuse was that, as I was on holiday at the time, it had not been possible to gain my approval.

He was a little upset when I ruined the sweet smell of victory by explaining to him why he had probably done the wrong thing. I was upset too, when he told me that the client concerned was the only one on our blacklist of companies not to do business with at any price.

Having swallowed the bitter reality of that situation, I thought it might be a good idea to enquire about the other one just in case. He hadn't by any chance given a discount to the other client had he? No prizes for guessing. He had also given the other client a discount. In exchange for what? In exchange for nothing.

In this case the client had suggested that the reason we were not getting his mainline business was because our prices were too high. Naturally the salesman was interested to know if a lower price would mean more business. When the client told him "yes, probably", he agreed a discounted price which would apply should he utilise the particular aspect of our service that was under discussion. In other words he committed the company to an unauthorised discount for a non-existent order.

Sadly, the salesman couldn't see that there was a problem. He admitted that he had overstepped his authority, but he believed he had been justified by the situations. So, I took him through as many of the ramifications as I could. I think both of us were surprised by the number of negative aspects involved.

When a company tells its salesforce that it does not give special discounts, or declares that any discount must be approved by senior management, such instruction is not a mindless edict but a discipline to ensure that salesmen consider all the ramifications of giving preferential terms. Let's look at some of them:

■ Once the client has been given a special discount a precedent has been set: "This company gives discounts." Therefore, the client will always press for price reductions on future transactions, although it may be that the scope for discount existed only on that particular occasion or on that particular product. Consequently, it is essential to make the client totally aware of the limitations and implications of any such arrangement.

■ The market grapevine is usually an efficient communications device, and whatever steps are taken to ensure secrecy you can be sure the word will get around eventually. So, when you show special favour to a particular client or prospect you can be reasonably sure that some of your established clientele will eventually be wanting to know why they are not enjoying the same terms.

■ It is very easy to get into conversation with the prospective client about agreeing discounts without getting anything in return, so that even small transactions in the future are subject to discounts that were intended for the much larger quantities anticipated at the time. In some circumstances the client will attempt to gain a commitment from the salesman to allow discounts, merely to use it as a stick with which to beat his present supplier or other competitors.

The only circumstances in which the salesman should commit his company to discounts – ie to discounts that have already been approved by his management – is when the client agrees to give something in return. What the client should give in return is commitment to action, and that action should be positive agreement to accept the proposition being offered.

■ Unless the supplier operates a strict national accounts system of sales coverage – ie one salesman has total responsibility for all outlets of a given account – then it is possible that a company will be called upon by more than one of the supplier's salespeople. Thus, any discussion about the possibility of special discounts should take place only at head office level.

It is not uncommon for one salesman to be talking special deals at branch level, while at the same time another salesman is tying up a national deal with head office based on standard prices.

■ Many salesmen seem to think that going back to their masters for authority is a slight upon their manhood. Nothing could be further from the truth. Suggesting that a special deal is a vague possibility that will need a lot of selling back at the ranch but could conceivably be achieved through the endeavours of the salesman gives much greater credibility to the value of the proposition.

■ One of the oldest tricks in the buyer's book is the mythical competitor routine. Even if there is no other competitor the buyer may talk about the possibility of better deals that might be had from elsewhere. In such circumstances it is easy for the salesman to be tempted into giving a special discount to clinch the deal. Don't swallow that one. Be firm, it's the only way.

■ There are many psychological forces at work in the selling process, particularly in product and company credibility. Discounts can have a very negative effect on this. Giving a special deal could imply that the supplier is badly in need of the business or that the product or service is in some way inferior to competitive offerings.

■ An obvious but often overlooked result of giving a special discount is that the company's income is reduced, while the costs of manufacture and service are not. In other words it becomes less profitable than business at the full price that could have been utilising the same resources. Salespeople are less money motivated than is generally thought. It is only when they receive their pay-cheque that many realise that their own profitability is reduced as well as the company's.

■ Above all, the salesman has to consider his own credibility. What happens if he agrees a special deal and his company doesn't accept it? Well, apart from anything else, he looks a complete idiot. What kind of salesman is he, anyway, the buyer is likely to ask – disorganised, uninformed, over-reaching his authority? Perhaps not the kind of person to whom he would want to entrust his business requirements.

Alan Williams

PUZZLE ANSWER

THE four amounts are: £1.20, £1.25; £1.80 and £2.50.